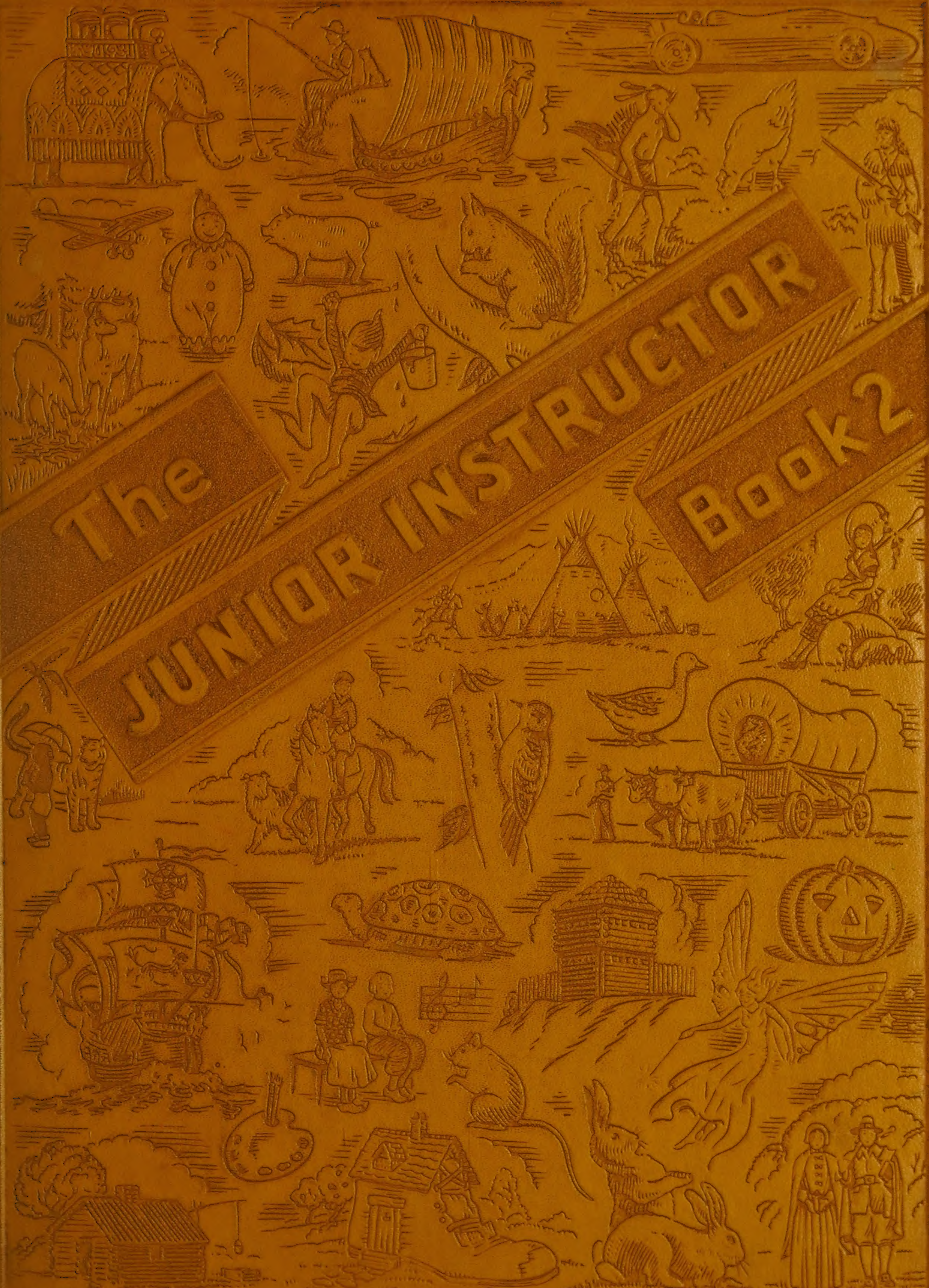
The JUNIOR INSTRUCTOR Book 2



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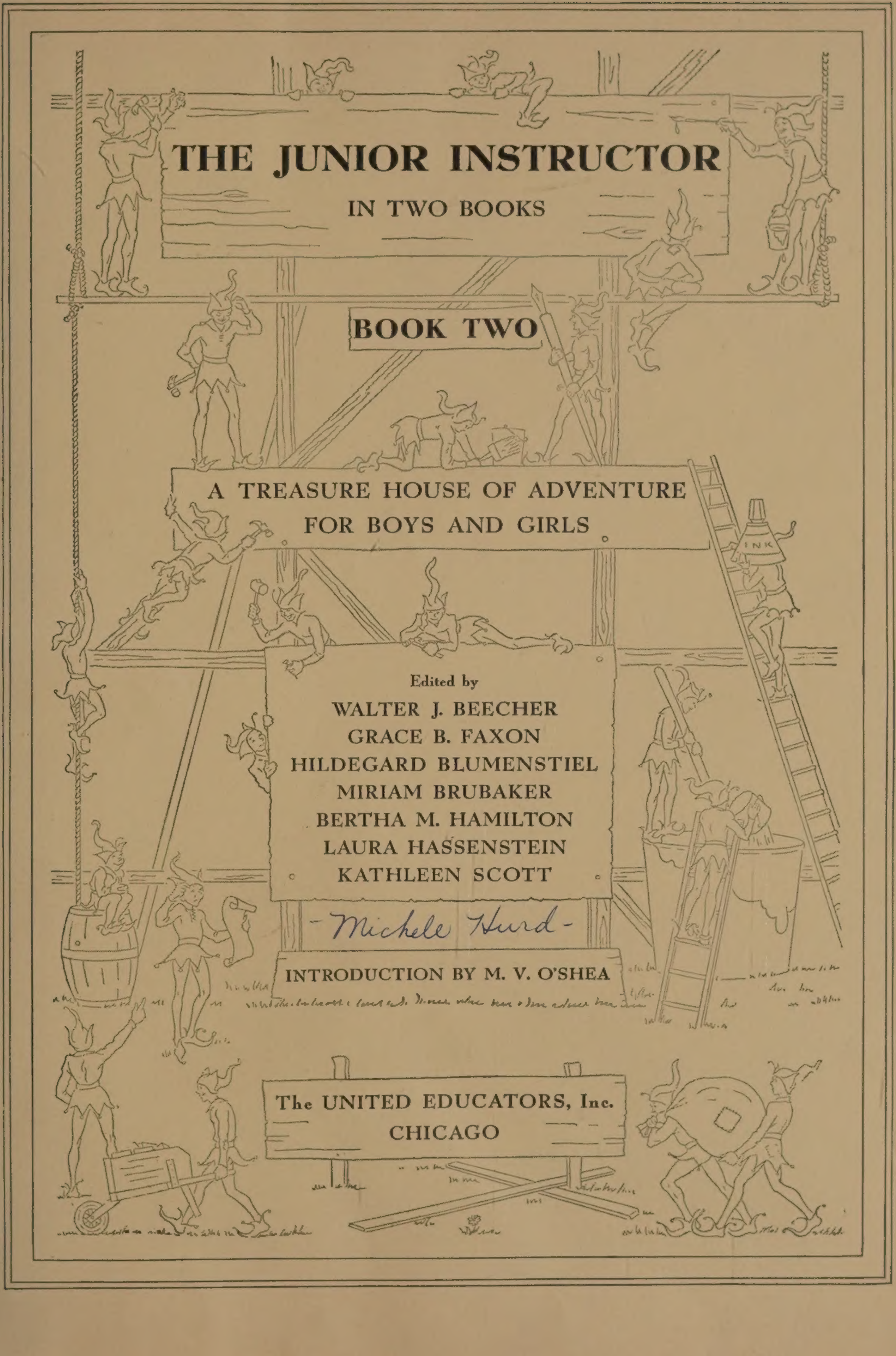

THE JUNIOR INSTRUCTOR

IN TWO BOOKS

BOOK TWO

A TREASURE HOUSE OF ADVENTURE
FOR BOYS AND GIRLS

Edited by
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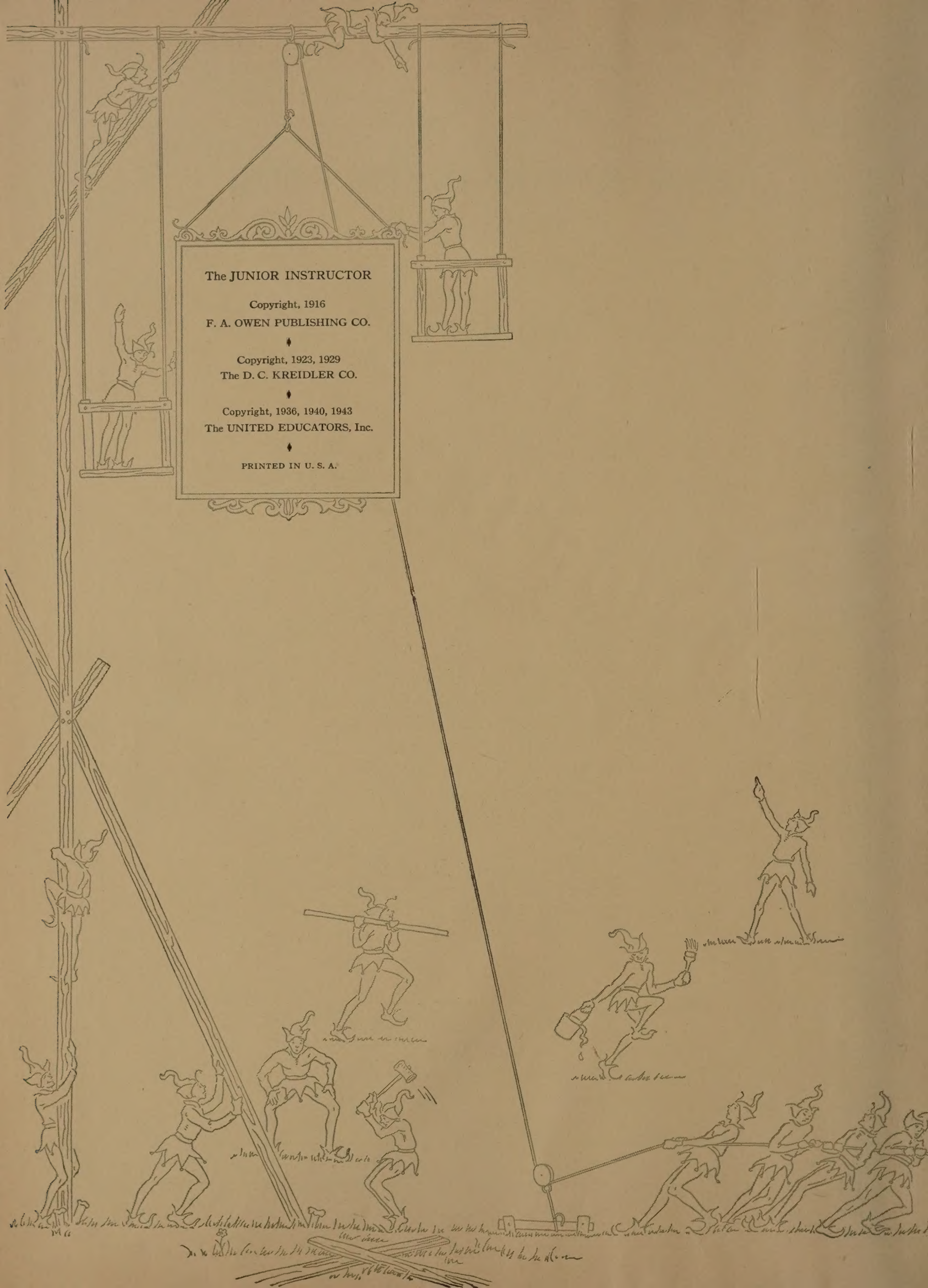

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Birds We Should Know By Name

By SARA V. PRUESER, Author of "Our Dooryard Friends;" and Other Writers.

If Ever I See

If ever I see
On bush or tree
Young birds in their pretty nest,
I must not, in play,
Steal the birds away,
To grieve their mother's breast.

My mother, I know,
Would sorrow so,
Should I be stolen away;
So I'll speak to the birds
In my softest words,
Nor hurt them in my play.

And when they can fly
In the bright, blue sky,
They'll warble a song to me;
And then if I'm sad
It will make me glad,
To think they are happy and free.
—*Lydia Maria Child.*

A Description of Some Common Birds

DID you know, my dear boys and girls, that in this wonderful world of ours there are thousands of species of songbirds; that the sparrow family alone has more than five hundred different members; that every field and farm is visited by more than one hundred kinds of birds each year; and that a score or more of them spend the winter often but a few rods from your own dooryard?

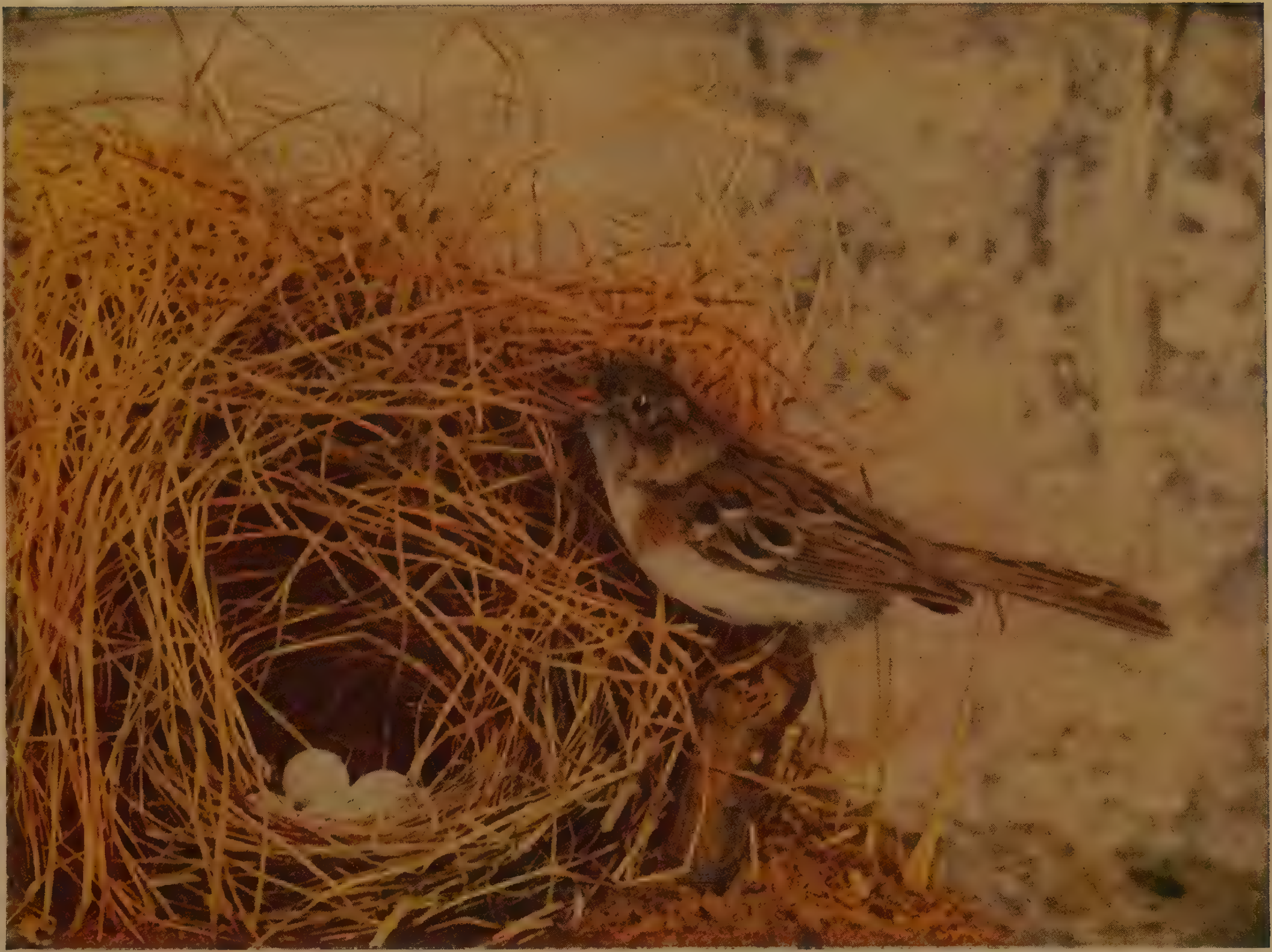
Now, I am wondering how many of these birds you really know well enough to call by name. And I am wondering, too, if you know their songs, their nests and eggs, what they eat, and of what use they are to mankind. For so often I find that few boys and girls know more than a half-dozen birds which because of their color they call bluebird, blackbird, redbird, and yellowbird. Many boys and girls have never seen how the swallows dart and fly through the air catching insects on the wing; or how the swift with his sharp tail-needles holds himself in the chimney; or how the woodpeckers with their strong chisel-like bills cut and drill through bark and wood and extract the deep-hidden grubs or tree borers; nor do they know that the little yellow warbler often builds a nest of two and even three stories just to get rid of an unwelcome cowbird's egg that has been laid in its soft, downy bed.

Of course, I know that you want to learn all these interesting things about bird life. I shall tell you of the common birds that live around your home, and those you may meet along the road or street. When you have learned to know them, you will make them your friends and work for their protection.

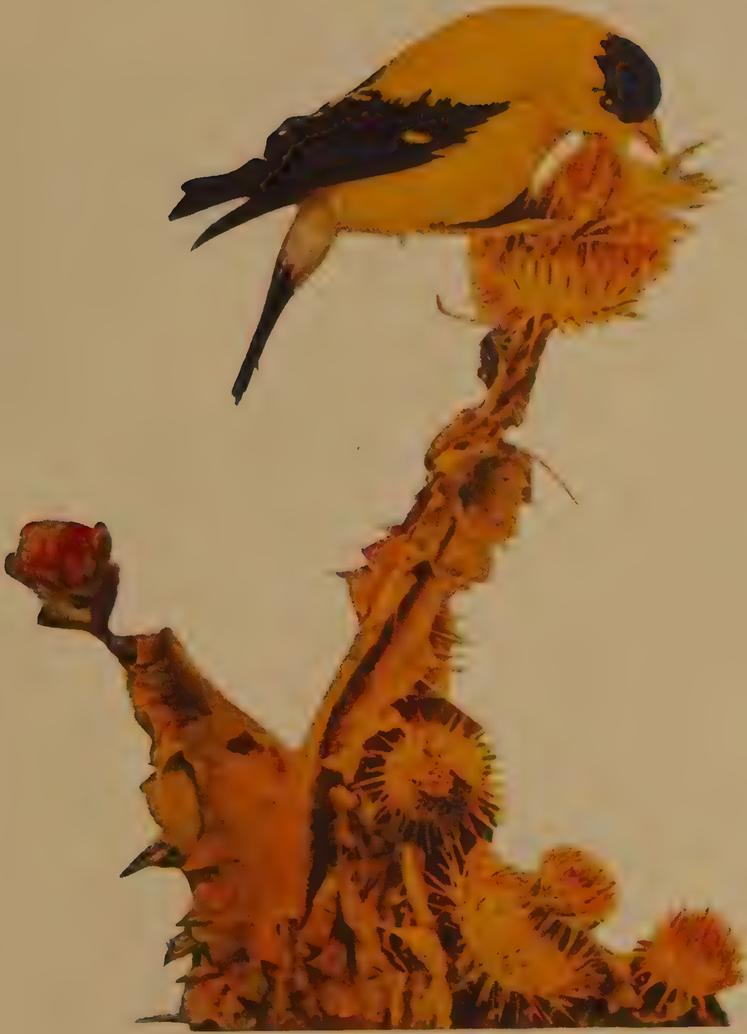
THE SONG SPARROW

First of all, I want you to know one of the commonest and yet one of the most beautiful singers of the Bird World—the song sparrow. Many children mistake this valuable sparrow for the female house or English sparrow, and because of this ignorance many useful song sparrows are killed each year. The female English sparrow, which has become such a pest to barns and dooryards, has a sooty gray, unmarked breast, while the breast of the song sparrow is a light gray conspicuously marked with dark brown and black streaks which form a round dark spot in the middle of the upper breast. The backs of both birds are very similar in coloring, being streaked with black, brown and gray, the usual colors of common sparrows.

Should you some day see a bird of about the same size and color as the song sparrow but whose outer tail feathers are white, just remember that it is a vesper sparrow and that its habits are quite like those of the song sparrow. The reddish brown bird you have always called a ground bird, that goes flitting along the fence rows and over the fields, is really a field sparrow. In the spring his crown-cap is quite reddish, and his bill a deep fleshy pink, but late in the fall he looks more like the vesper sparrow for he has doffed his reddish brown and black coat for one of more somber hue. The vesper sparrow, sings a sweet little strain, heard oftenest at milking-time when the cows come home. and in the same hour you can hear



FIELD SPARROW
⅘ Life-size



GOLDFINCH
⅞ Life-size

the repeated "cher, we, dee, dees" of the field sparrows.

But you will, I am sure, vote the gold medal to the song sparrow for he is the star singer of the Sparrow family. None can excel him. Almost every week, in every month of the year, you can hear him sing his merry "tweet, tweet." In wind or sun, rain or shine, perched on an upper limb of some low bush or tree, he is ever ready to pour out his "very merry cheer" to you and to me. Nor does he tire you by always singing the same song, but varies it to suit his own pleasure. Whatever change he may make, there are always several long notes followed by a sweetly modulated little trill. His song is not altogether unlike that of the tame canary, but much more sweet and liquid, with a wild woodland air which is exceedingly captivating.

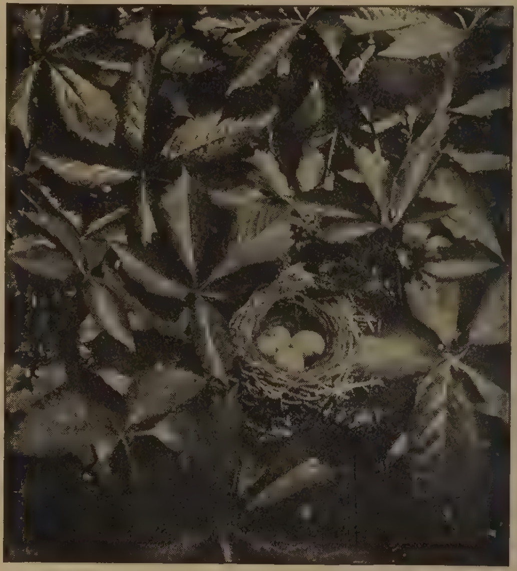
Where will you look for the song sparrow's nest? In the high tree-tops? No, not there, but down on the ground, or in some low, leafy bush or shrub, it places its grassy cradle, with the coarser straws forming the outside and with an inner lining of finer grass and grassy stems. Sometimes hair also is used for the lining. The eggs are small; bluish white spotted with brown; and usually four or five in number. A pair of song sparrows may raise twelve or fifteen "youngsters" in a summer, for they usually rear three broods in one season.

"And what does the song sparrow eat?" Seeds—grass seeds, weed seeds; and some insects too. Every one of his three-course meals has two parts of weed seeds with one part of insects. In summer he has smartweed seeds for breakfast, luncheon, and dinner, with grasshoppers, beetles and caterpillars in season. He gets the insects from your fields and gardens. During the winter season his menus consist almost wholly of various kinds of weed seeds, as dock, sheep sorrel, and ragweed.

THE CHIPPING SPARROW

Besides the song sparrow, there is another little sparrow that is a very common visitor to your dooryard vines and bushes. He arrives about the tenth of April and spends the summer. He is the smallest of our sparrows, but he has several names to his credit. One boy calls him a hairbird, another a chippie, and others know him by the name of chipping sparrow. The first name is given to him because of the skillfully woven nest of hair that he and his mate build. It is made almost entirely of hair and grass stems and placed in some low bush, preferably an evergreen or thorn bush. But most of all, these little sparrows like to nest in the vines that cover your porches and windows. I know a family that has had as many as four nests in the wisteria vines that screened their windows. The hairbirds raised two and three broods in a season, so there were a dozen more birds to pick off the cucumber beetles and currant worms. The last two names have been given to this little brown bird because of his chipping song, which is a kind of insect-like trill, and sounds very much like the words "chippie, chippie" when repeated very rapidly.

You may know this sparrow by his reddish crown, which he changes for a dull striped one in autumn, and by his drab, unspotted breast.



Chipping Sparrow's Nest with Two Cow-bird Eggs in It

Will you not make all these sparrows your friends?—for they are great seed eaters and help to keep the farmers' fields free from weeds as well as insects. Plant a bush near your home in which they can build their nest, and watch your cat that he does not destroy the young ones.

JUNCOS (SNOWBIRDS)

When the snow lies knee-deep in the bare, cold woods, a flock of little dark-colored birds will blow into your yard and perhaps settle down near the back porch to pick up the few seeds and crumbs you have thrown out for them,. How hungry they seem! And do you wonder, when you know that they have been breakfasting for weeks on the weed seeds whose black skeleton stalks extend above the universal white. Feed these little birds. They are sparrows too, but an excellent lot of little fellows which harvest the remaining crop of weed seeds for the farmers.

Unlike other members of the sparrow tribe, the males have slate-colored backs and throats, with the outer tail feathers white. The females are more of a brownish iron-gray.

The juncos are winter residents and depart for the northern states or the mountains late in April or early in May, where they build their nests and rear their young.

Goldfinch

Called also Wild Canary and Yellowbird.

Length: 5 inches. About 1 inch smaller than the English Sparrow.

Color: Winter: Male—Olive drab, shoulders and throat yellow, brownish white underneath. Summer: bright yellow except on crown, frontlet, wings and tail, which are black. Wings banded in white. Tail has white on inner webs. Female—Brownish olive above, yellowish white beneath.

Range: Common in North America from the tropics to the Fur countries and west to California.

Migrations: May. October. Common summer resident, often seen in winter as well.

Does every child know that the goldfinch has a sparrowy look in the winter season? And he should have, for he belongs to the same family. His plumage in the winter months is a blending of dull grays and browns, quite unlike the brilliant yellow and jet black of his summer suit. In April as he comes from the thick woods, where he has wintered, he appears in breeding plumage. These changes of plumage are effected by moults which take place in the autumn and again in early spring. There is less change in the plumage of his mate; the olive green and yellow of her summer dress is replaced by the dull grays and browns of winter.

Many boys and girls call the goldfinches wild canaries. They are not canaries but finches; for their habits of song, flight and food-getting are very much like the sparrows and finches. They also are known erroneously as thistle birds, and yellowbirds.

Watch a pair of them feeding upon the seeds of the thistle, wild lettuce and mustard. Do you know of a prettier moving picture as they flit from one stalk to another, illuminating each separate plant with the shining gold of their well-formed bodies? Last summer a pair of them came almost daily to the vegetable oyster plants that grew outside our garden fence. I loved to watch them pull the slender, chaffy seeds from the long capsule, taking with each billful the seed part and letting the chaff drop to the ground. Their food consists chiefly of all kinds of weed seeds, especially the seeds of ragweed, mullein, dandelion and sunflower. In summer they eat some insects, such as plant lice and young grasshoppers.

Everybody loves the goldfinch's song. It is a sweet, spontaneous medley of rippling slurs and trills that charms the most wayward ear. Listen to him as he sits on the garden fence singing his mating song, and when he goes bounding over the frozen fields calling "per-chi-o-re," and again when he settles down in a patch of weeds uttering his feeding notes, "twee, twee, twee, twee."

Have you ever seen the goldfinch's nest? They build late; some time after the fourth of July. Collecting some bits of bark, grass fibers and down, the female forms them into a compact waterproof nest. This she lines with plant down—thistle, lettuce and dandelion silk. What a beautiful thing it is! So skillfully made and formed, as if it had grown into shape like the saucer of an acorn! In this almost water-tight, silk-lined nest from three to six bluish-white eggs are laid. The eggs are quite small and a spotless white.

Mrs. Goldfinch's "Afternoon Delight"

The thistles at the country-side
  Were ripe; the day was bright
For Mrs. Goldfinch, when she gave
  Her "Afternoon Delight."

Arrangements all were perfect;
  Her black and yellow dress,
Just touched with white, was elegant;
  Her manners were no less.

And oh, the folks invited!
  Well, everybody came,
From Tommy-Tip-Up-Teeter-Tail
  To some I couldn't name.

Miss Polly Pewee—she was there
  With Mr. Grackle-wing;
Miss Oriole from Baltimore,
  Came all the way to sing.

Miss Long-Stilts came from Jersey,
  And walked 'most all the way;
Miss Sparrow rode, I understood,
  On top a load of hay.

Will you believe it, every one
  Had just what he would wish!
Miss Robin had a dish of worms;
  For several there was fish.

Miss Pewee had some marmalade
  Of moths, and rose leaf tea,
And drank so much she sang "Peet-weet!"
Instead of "Pe-wee-ee,"—

Which Tommy-Tip-Up didn't like;
  And so Miss Oriole
Set up a song like dripping pearls
  And all the wooded knoll

Resounded with the melody;
  And every lily-bell
Swung out upon the evening wind
  Until the darkness fell.

And then the merry company
  Broke up, and I suppose
That every little boy and girl
  In all the country knows

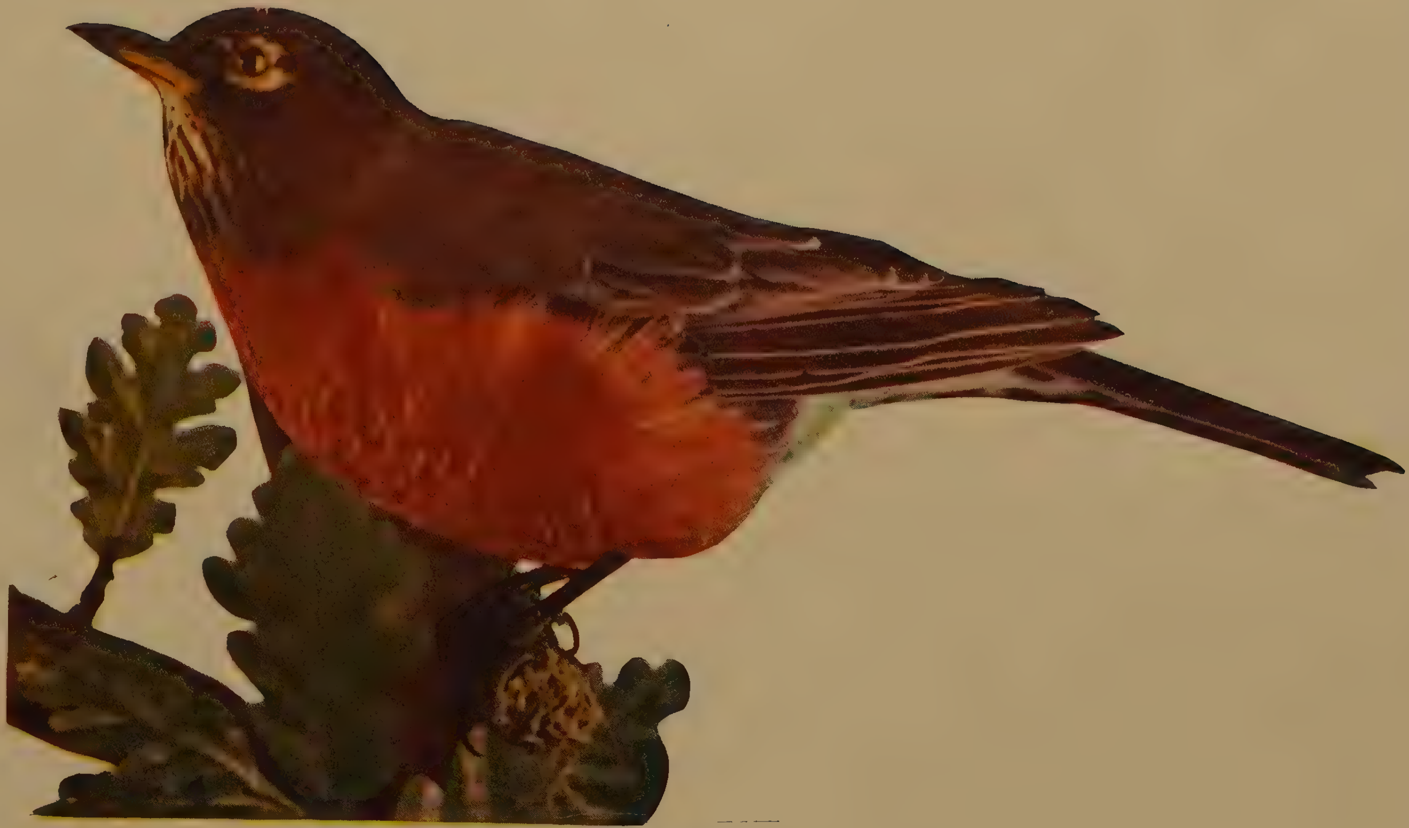
That Mrs. Goldfinch, after this,
  Put off her yellow gown,
And since that "Afternoon Delight"
  She wears a cloak of brown.

—*Herbert Randall.*

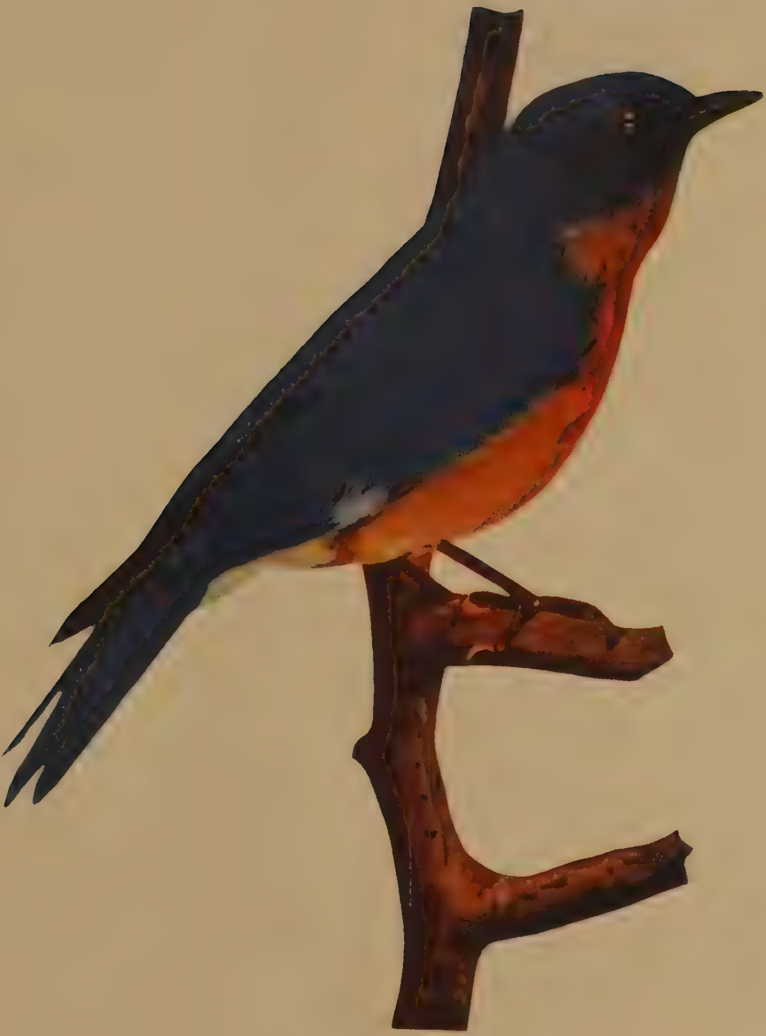
Don't Kill the Birds

Don't kill the birds, the pretty birds,
  That sing about your door
Soon as the joyous spring has come
  And chilling storms are o'er.
The little birds, how sweet they sing!
  Oh! let them joyous live;
And never seek to take the life
  That you can never give.

—*J. Colesworthy.*



ROBIN
⅘ Life-size



BLUE BIRD
Life-size

Robin

Called also Red-breasted Thrush, and Robin-redbreast.

Length: 10 inches.

Color: Male—Dull olive gray above; head black; tail brownish black, with exterior feathers white at inner tip; wings brownish; white eyelids; breast bright rusty red, whitish below tail. Female—Duller and paler colors, resembling the male in autumn.

Range: North America, from Mexico to Arctic regions.

Migrations: March. October or November.

> "They'll come again to the apple-tree,
> Robin, and all the rest."

Yes, so they will, and where is there a girl or a boy who does not love our American robin, or thrush, with his brownish red breast and slatey gray back? Before February snows have made way for March flurries, he is back from the Southland, as pert and cheery as a new-born chick. He carols from the bare trees in your yard; he flies to the back porch for a bit of food carelessly dropped there; he pecks on the window sill. and hops across the frozen lawn, just to let you know that he has come back to you, and that "the rest" are coming too. He is, perhaps, one of the vanguard that has arrived a few days before the great migrating train.

How he chirps and chuckles! Listen to his pleasant chatter as he talks to a lady robin whom he wishes to win for a wife. They have been getting on better terms every day. Now they are very near to each other in the same tree. There! she flies away and he takes after her, and so their courtship continues.

They will come back again, and in a few days perhaps decide to build their plastered house in the maple tree in your yard. Watch them build their nest! See how they bring the coarse sticks and weed stems and place them in the crotch of the tree; then more straws and grassy stuff are brought and cemented into a hard bowl by the use of clay that they carry with their bills. The mother robin molds the nest into shape with her feet and body, molding as she builds.

In less than a week the nest is finished, several greenish-blue eggs have been laid in it, seldom less than three nor more than six. The eggs hatch in about half the time that it takes for the bantam's eggs, so in eleven days you may look for young robins. The little nestlings grow very rapidly and soon their dark-spotted breasts reveal their identity as members of the thrush family, for the robins are thrushes. Watch them feed the baby robins meaty food. Great long earthworms are cut up and put down the throats of the gaping mouths. Cut-worms and all kinds of grubs are fed to them. When the young ones are half-grown, they may have small fruits and seeds.

Because robins are very fond of fruit, such as grapes, cherries and all kinds of berries, many farmers have looked upon the unfortunate birds as the destroyers of their fruit crops.

In the South and West many robins are destroyed each year; some for food, others because they prey upon the fruit orchards. Those who destroy them should remember that the robin eats a great many injurious insects, as beetles, cutworms and caterpillars, and that he should be treated as a welcome guest to their farms rather than as an enemy.

How the Robin Cured the Dumps

"All the world is glad and gay
When Robin comes to town,
Robin in his vest of red
And sober suit of brown,"

sang the Twinnies gaily, for the merry little robins were flying back from their Southern winter home and settling in the old apple tree.

"Let's play 'Babes in the Wood,' said Little Girl Twin, "and see if the robins won't cover us up with leaves, like the story."

"I'm afraid they'll be too busy building their nests," laughed Grandma.

"Then let's help them build," suggested Little Boy Twin.

So the children put a large pile of sticks and straws and bits of string out under the apple tree. But the saucy little robins would not even look at them. They hurried to build the nest out of weed stalks, grass and mud which they found themselves.

The Twinnies were disappointed not to be able to help. But Mr. Robin sang so plainly, "Cheer up! cheer up!" that the twins just had to laugh and cheer up.

While the nest was being built, it began to rain, but the cheery little singers sang right through all that pouring rain.

The Twinnies were in the dumps. (I hope that you never have been there.) They were very, very doleful. They didn't like being shut up in the house.

"I wish I had two cheery little robins inside this house," hinted Grandma.

"I'll give a quarter," said Grandpa, "to the one who learns this verse first. It's about Mr. Robin out there in the rain."

"'Cheer up! cheer up!' Just hear him
Far down that leafy lane—
A crimson-breasted robin
A-whistling in the rain.
Never a doleful note,
Glad of the day, be it bright or gray,
Nature's philosopher singing away
In his rusty old brown coat."

It wasn't five minutes before each of the youngsters had a quarter.

"Don't forget the rhyme," said Grandpa, "the next time that you feel blue. It'll cure you, sure. Don't let a little robin get ahead of you. You can be cheery too."

There were two sets of four little blue-green eggs in the nest that spring, for the robins raised two families in that same nest.

Grandpa nailed a drinking dish on top of a post, so the robins could drink and bathe. Robin loves to splash. The twins nailed a piece of tin around the tree where the nest was so Kitty couldn't climb up and catch the little birds.

"How awfully hungry they are," said Little Boy Twin, as he watched them eat one day.

"They say each robin eats about sixty-eight worms every day," laughed Grandpa. "That's hungrier than even a small boy whom I know."

"Then I won't mind if they do eat some of my cherries," said Little Girl Twin. "I think they earn a treat."—*Jean Halifax.*

Bluebird

Called also Blue Robin.

Length: 7 inches.

Color: Male—Upper parts, wings and tail bright blue, growing rusty in autumn; throat, breast and sides cinnamon-red; underneath white. Female—Has duller blue feathers, and a paler breast than the male.

Range: North America, from Nova Scotia to Gulf of Mexico. Southward in winter as far as Bermuda and the West Indies.

Migrations: March. November. Summer resident. A few sometimes remain throughout the winter.

Another member of the thrush family is the bluebird. I love the bluebird's song, just because he brings back to me all the joy, love and sweetness of springtime. Do you not love his soft, well-modulated warble as he shifts along your garden fence in early March? Of course you do. This same bluebird may have spent the winter in some clump of evergreens near your home, for a few bluebirds winter as far north as northern Pennsylvania, but the greater number of them seek the warm sunshine of the South.

How bright and beautiful are the sky-blue of his back and the rusty red of his breast! What a contrast they are to the dull grays and tans of the bare landscape, for the bluebird comes early. Before winter has turned over its frozen earth to the softening warmth of spring showers, his mate arrives. Together they go house-hunting. Have you a bluebird's house to let? I hope every child has, for then he may keep this gentle pair of birds near his home; otherwise they will seek summer quarters elsewhere; in some hollow post or rail-fence, or fruit-tree, or perhaps in some vacated house in a hollow tree that was previously occupied by the downy woodpeckers.

In the grassy nest from three to six pale blue eggs are laid. No doubt you wonder how the little bluebirds get out of their home in the hollow tree, which is a tunnel running vertically. Examine their little toes and you will find that they have sharp hooks that assist them in climbing up and out of their tree-trunk home. The immature bluebirds, like young robins, have dark-spotted breasts. Their backs are grayish.

The young birds are fed chiefly upon insects, for three-fourths of the parents' food is insects, beetles, grasshoppers and caterpillars. The vegetable food consists of wild fruits and seeds. The bluebirds are specially fond of wild berries. Pokeberries, partridge berries, juniper berries, and the fruit of the greenbrier, bittersweet and Virginia creeper make up their diet according to the season.

Winged lute that we call a bluebird, you blend in a silver strain
The sound of the laughing water, the patter of spring's sweet rain,
The voice of the winds, the sunshine, the fragrance of blossoming things,
Oh, you are an April poem, that God has dowered with wings.
—*Eben E. Rexford.*

The Bluebird

When winter's cold tempests and snows are no more,
Green meadows and brown-furrowed fields reappearing,
The fishermen hauling their shad to the shore,
And cloud-cleaving geese to the Lakes are a-steering;
When first the lone butterfly flits on the wing;
When red glow the maples, so fresh and so pleasing,
Oh then comes the bluebird, the herald of Spring!
And hails with his warblings the charms of the season.

Then loud-piping frogs make the marshes to ring;
Then warm glows the sunshine, and fine is the weather;
The blue woodland flowers just beginning to spring,
And spicewood and sassafras budding together:
Oh then to your gardens, ye housewives, repair!
Your walks border up; sow and plant at your leisure;
The bluebird will chant from his box such an air
That all your hard toils will seem truly a pleasure.

He flits through the orchard, he visits each tree,
The red flowering peach and the apple's sweet blossoms;
He snaps up destroyers wherever they be,
And seizes the caitiffs that lurk in their bosoms.
He drags the vile grub from the corn he devours,
The worms from their webs where they riot and welter;
His song and his services freely are ours,
And all that he asks is in summer a shelter.

The ploughman is pleased when he gleans in his train,
Now searching the furrows, now mounting to cheer him;
The gardener delights in his sweet simple strain,
And leans on his spade to survey and to hear him;
The slow-lingering schoolboys forget they'll be chid,
While gazing intent as he warbles before 'em
In mantle of sky-blue, and bosom so red,
That each little loiterer seems to adore him.

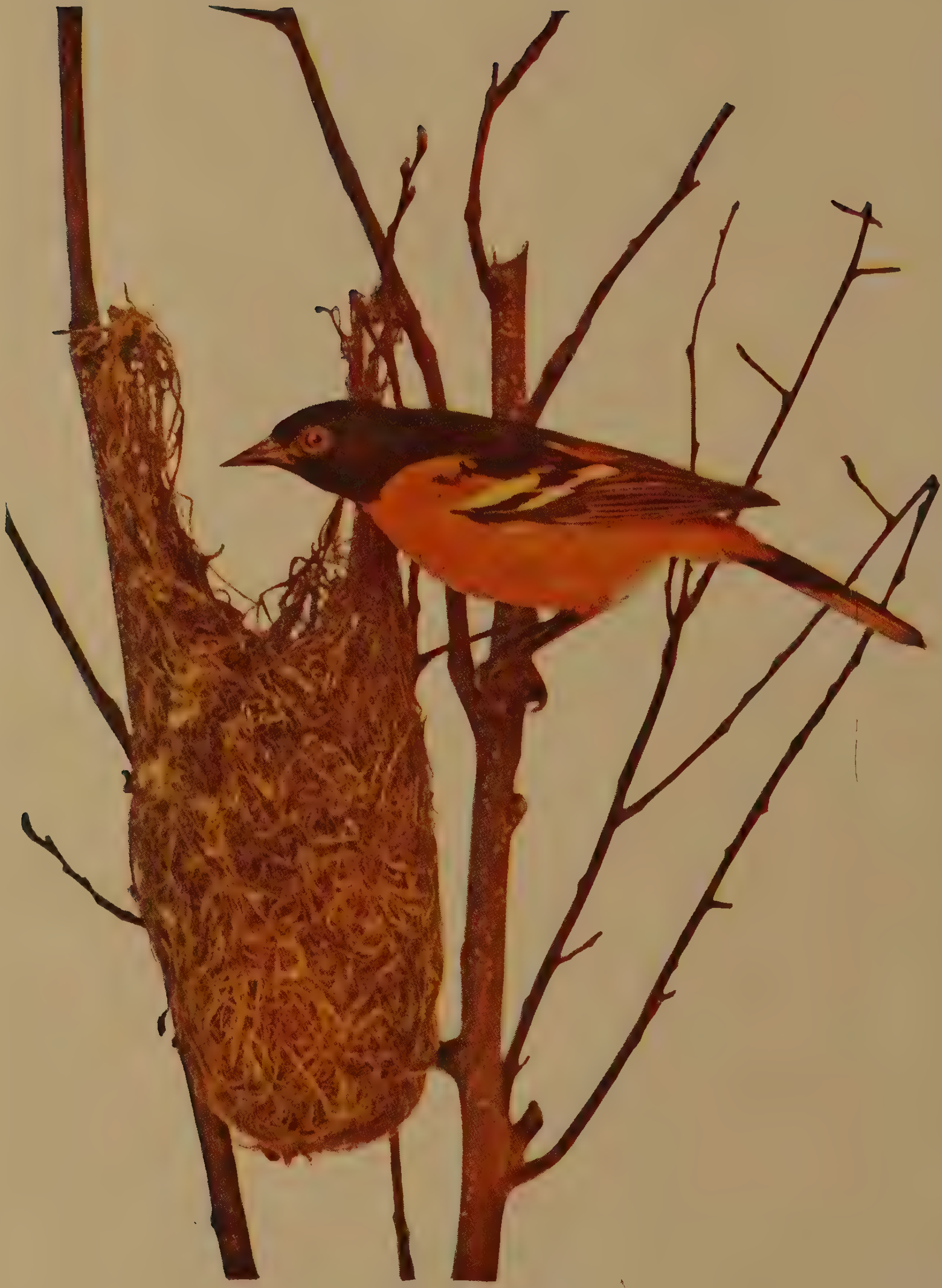
When all the gay scenes of the summer are o'er,
And autumn slow enters so silent and sallow,
And millions of warblers, that charmed us before,
Have fled in the train of the sun-seeking swallow,
The bluebird, forsaken, yet true to his home,
Still lingers, and looks for a milder tomorrow,
Till, forced by the horrors of winter to roam,
He sings his adieu in a lone note of sorrow.

While spring's lovely season, serene, dewy, warm,
The green face of earth, and the pure blue of heaven,
Or love's native music have influence to charm,
Or sympathy's glow to our feelings is given,
Still dear to each bosom the bluebird shall be;
His voice, like the thrillings of hope, is a treasure;
For, through bleakest storms if a calm he but see,
He comes to remind us of sunshine and pleasure!
—*Alexander Wilson.*

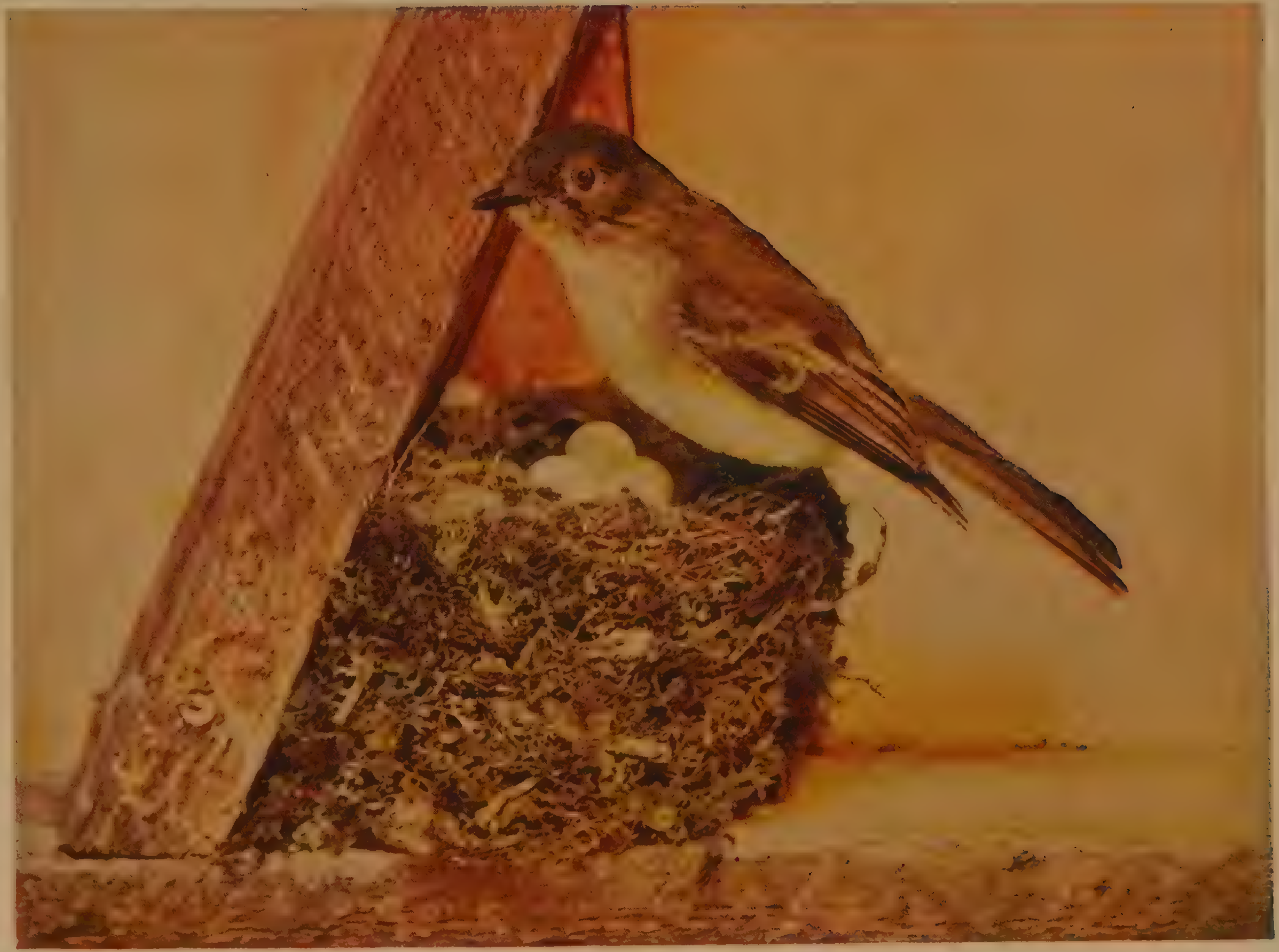
A Band of Bluebirds

Oh, happy band of bluebirds,
Brave prophets of the Spring,
Amid the tall and tufted cane
How blithesomely you sing!
What message haunts your music
'Mid Autumn's dusky reign!
You tell us Nature stores her seeds
To give them back in grain!

Oh, happy band of bluebirds,
You could not long remain
To flit across the fading fields
And glorify the grain.
You leave melodious memories
Whose sweetness thrills me through!
Ah, if my songs were such as yours,
They'd almost touch the blue!



BALTIMORE ORIOLE
⅝ Life-size



PHOEBE
¾ Life-size

Baltimore Oriole

Called also Golden Oriole; Firebird; Hang-nest; English Robin; Golden Robin.

Length: 7 to 8 inches. About one-fifth smaller than the robin.

Color: Male—Head, throat and upper part of back glossy black; wings black, with white spots and edgings; tail quills black, with yellow markings on the tips; everywhere else orange, shading into flame. Female—Yellowish olive; wings dark brown, and quills margined with white; tail yellowish brown, with dusky bars.

Range: The whole United States.

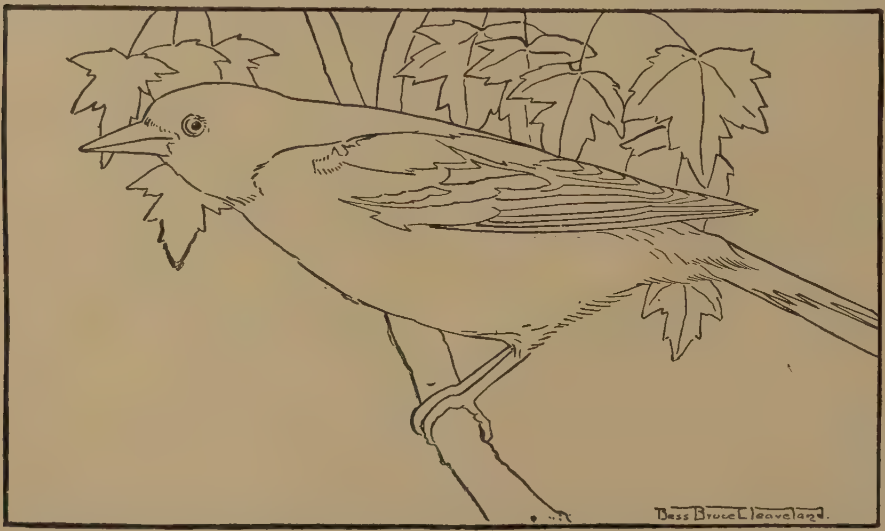
Migrations: May. Middle of September. Summer resident.

Are you saving some pieces of string and cord for the orioles this spring? For the Baltimore orioles will want many yards of cord. The little empty pouch suspended above my head has no less than twenty-five yards of it darned into its fabric. Hang some long pieces on the branches of the trees near your home and watch them disappear. Horse-hair and cord are the materials that form the warp and woof of the Baltimore's nest, in which a small opening is left through which the bird enters. In this soft, swinging cradle from four to six white eggs, lined and scrawled with black, are rocked by every passing breeze. Are you surprised that the oriole is sometimes called the hang-nest?

The Baltimore's colors have won for him other names, as firebird and golden robin. Only the male is dressed in bright, flaming orange and black. The female has a dull, blackish-yellow back, and a dusky yellow breast and tail. The orchard oriole has a dull black back and reddish-brown breast. It is frequently seen in parks, gardens and orchards.

Both the Baltimore and orchard orioles are great insect eaters. The former feeds upon the caterpillars and insects of the forest trees while the latter eats the moths and larvae on the fruit trees.

Every child likes the Baltimore's song, a rich, ringing whistle, but get up at sun-up some morning in middle May and hear all of it, as he sings it to his mate. It is wonderfully charming!


Bess Bruce Cleaveland.

The Oriole

Trace this pattern, transfer to water color paper and give it to the child to color.

The Oriole's Nest

A whir of wings, a flash of light,
A glimpse of orange and of night,
A trill of song both sweet and low—
The sights and sounds that charm us so.

A nest of straw and grasses neat,
A home for birdlings, fresh and sweet,
So high above on slender rack,
Is swinging gently forth and back.

On lofty bough the nest is made,
And glimmers in the light and shade,
Among the leaves so deep and green
They shimmer in their silver sheen.

The maple tree is tall and old,
That stood through heat and winter's cold;
Its twigs are strong to bear the nest
Of orioles with golden breast.

So silently they come and go,
With scarce a note, though soft and low,—
The orioles are bringing food
On tireless pinions to their brood.

Oh what a nest of love is this,
Sweet emblem of the heav'nly bliss,
Where hallowed peace and calm abide
Through all the gentle summertide.

—*W. H. Sheak.*

The Oriole

Lady-locket lost her pocket,
  Lost it out in the orchard grass;
And a little fellow clad in yellow
  Found it as he chanced to pass.
And he said, or sang it, "Ho, I'll hang it"—
  These were his very sing-song words—
"Where bloom comes quickest, and bloom is thickest,
  I'll hang it up for my baby birds!"

It looked so funny—a bag for money,
  A grass-cloth pouch so quaint and odd—
With a woven shining silken lining
  Made from a broken milk-weed pod.
Leaves were growing and buds were blowing,
  And he did his wisest and his best
To try to hide it, but some one spied it,
  A boy, who cried, "A hang-bird's nest!"

"Oh Sister-locket, it is your pocket
  Swinging here in the apple-tree!
If the tree were smaller and I were taller
  I'd get it for you again, maybe!"
The wind grew merry over this, very,
  And laughed as he tossed the nest-hung bough,
"If you don't mind falling and head-long sprawling,
  And bumps and bruises try it now!"

—*Our Little Men and Women.*

Phoebe

Called also Dusky Flycatcher.

Length: 7 inches. About an inch longer than the English Sparrow.

Color: Male and female—Dusky olive-brown above; darkest on head; slightly crested; wings and tail dusky; dingy yellowish-white underneath; bill and feet black.

Range: North America from Newfoundland south, and westward to the Rockies. Winters south of the Carolinas, into Mexico and Central America.

Migrations: March. October. Summer resident.

One of the first flycatchers to arrive in the spring is the phoebe. Pronounce the name very rapidly several times, and you have the phoebe's song. It is a short, jerky one of only two syllables.

The phoebe is a little larger than the sparrow, and in her plumage she has copied the shades and colors of the bare branch on which she perches. Her blackish head, dull gray back and grayish white breast blend so well with the naked trees and weathered posts that phoebe is not at all conspicuous.

She likes a covering for her nest. Will you welcome her to the shelter of your porches and piazzas? Or will she have to build under some old bridge or trestle? For two summers phoebes have built under our porches. Two nests were placed on the projecting ledge above the window and another in a niche under the porch-roof. The nests were made of moss, lichen and mud, lined with wool. The phoebe often uses hair, and sometimes feathers, for lining. The eggs are white and small, usually four in one setting.

The phoebe builds a good-looking nest, but too often makes the mistake of taking for her linings materials infested with vermin. The wool-hair-and-hay nest serves as an excellent incubator for the parasites. One family of phoebes in our porch raised but two of their four nestlings because, before I knew, the life of the two had been sapped by the lice that swarmed inside, outside and all about the nest. A little insect or Persian powder dusted on it put an end to the vermin. Another nest was constructed a few weeks after, near the same place, the phoebes using the same kind of materials, but it fared better. The four young birds that came forth from the little white eggs all lived and helped to rid the yard of flies and spiders, and the garden from noxious weevils and beetles. In June they helped themselves to a few cherries, to which they were most welcome for they also ate many young grasshoppers. I am sure that all right-thinking boys and girls will want the phoebes to nest near their homes, and will do all they can to protect them from their enemies.

Phoebe

When skies are blue
And threaded through
With skeins of sunlight spangles,
And breezes blow
Quite soft and low
Amid the tree-top tangles;
When summer has the world in thrall,
And joy is sovereign over all,
'Tis curious that a little bird
Should utter such a wistful word
As "Poor me! Poor me!"

When days are long,
And limbs are strong,
And blithe with youth the season;
When everything
Is tuned to spring
And rhyme, and not to reason;
When life is all a holiday
With naught of care and much of play,
'Tis sinful that a little maid
Should such complaining words have said
As "Poor me! Poor me!"

—*M. Lippman.*

Phoebe

It is a wee sad-colored thing,
As shy and secret as a maid
That, ere in choir the robins sing,
Pipes its own name like one afraid.

It seems pain-prompted to repeat
The story of some ancient ill,
But *Phoebe! Phoebe!* sadly sweet
Is all it says, and then is still.

It calls and listens. Earth and sky,
Hushed by the pathos of its fate,
Listen: no whisper of reply
Comes from its doom-dissevered mate.

Phoebe! is all it has to say
In plaintive cadence o'er and o'er,
Like children that have lost their way,
And know their names, but nothing more.

—*James Russell Lowell.*

Feathered Name-Speakers

Do you see that bird on the apple tree,
As white with blossom as it can be?
Ask her her name and she'll sing to thee—
She heard you and answers, "Phe-be, Phe-be!"

I hear a bird when the days are bright,
Blithely he whistles from morn till night;
Timid is he and seldom in sight;
How sweetly he tells me his name—"Bob White!"

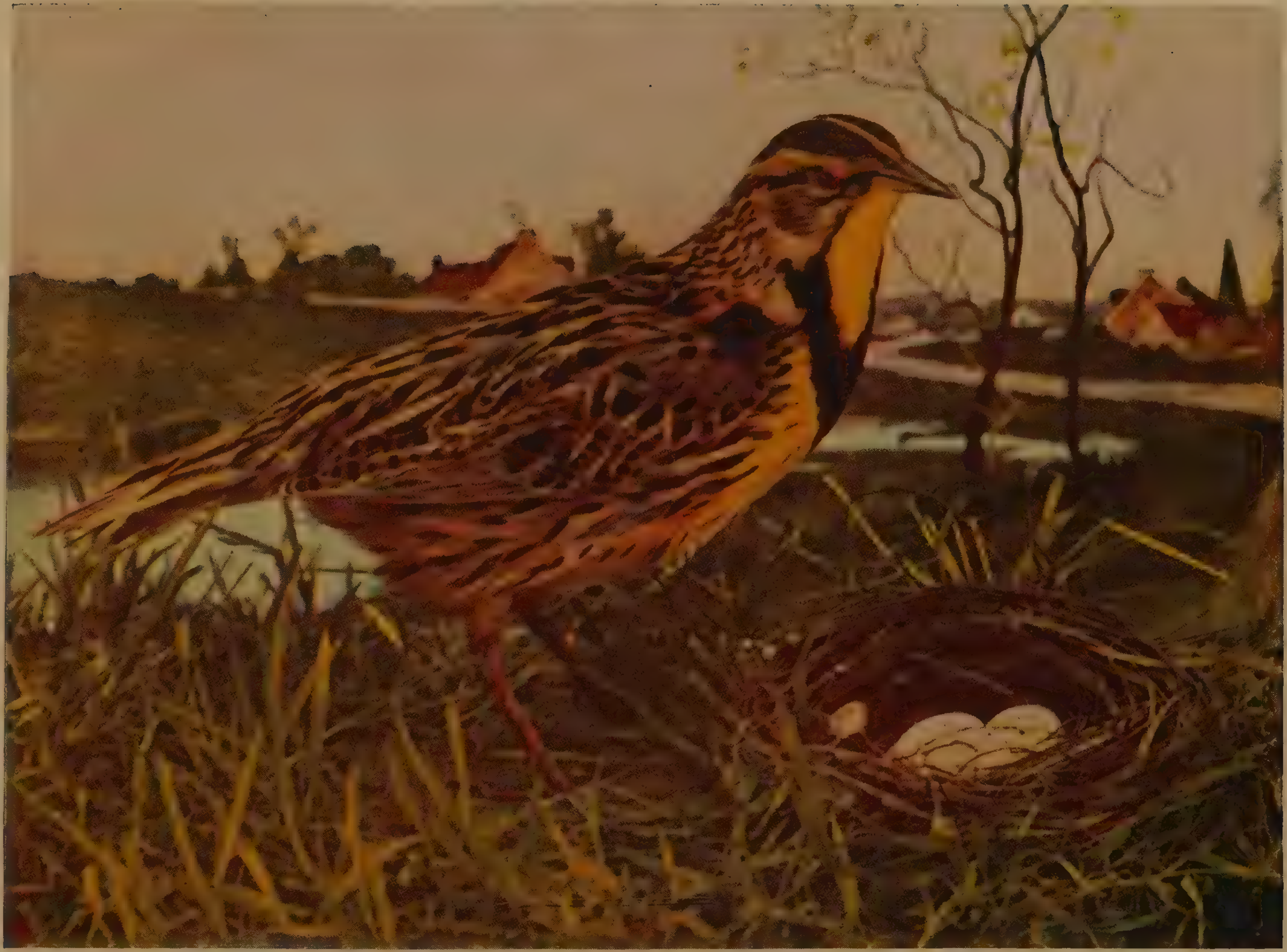
Lo! there comes another! Where do you think
This fellow stands to teeter and prink?
On a clover top, where the cattle drink,
He chatters his own name, "Bobolink!"

And now it is night and the world is still;
Not a ray of sunshine gleams on the hill.
Another bird speaks in accents shrill,
Suddenly giving her name—"Whip-poor-Will!"

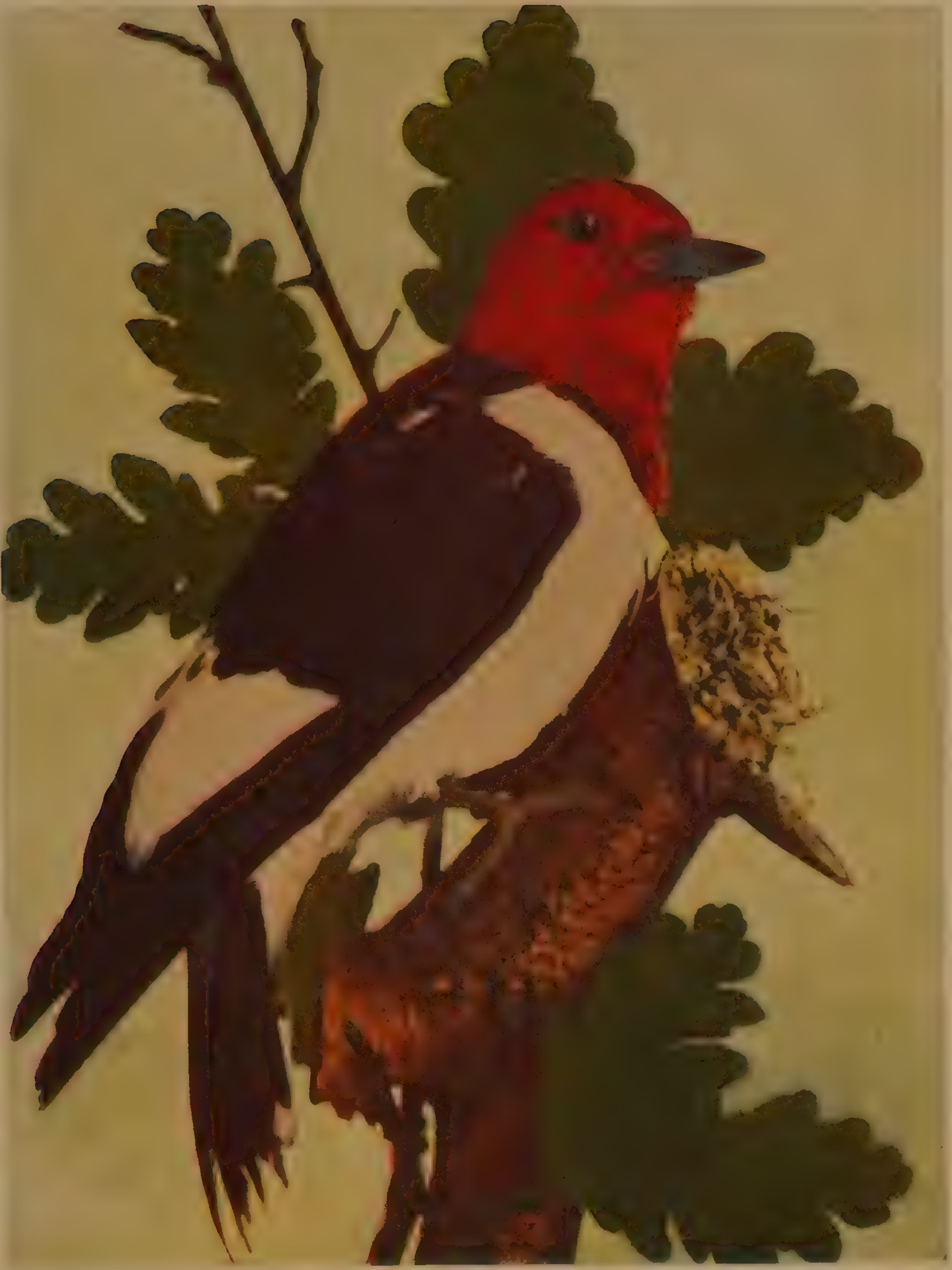
Who taught you, O birds, to know so well
Those names you're always quite ready to tell,
With voices musical, clear as a bell?
Alas! we must bid each other farewell.

Again we shall meet, though you'll go away;
Bobolink, Phebe, dear, sing while you stay,
And whistle, Bob White, while they're making the hay;
Winter will silence the music of May.

—*Selected.*



MEADOWLARK
⅝ Life-size



RED-HEADED WOODPECKER
Life-size

Meadowlark

Called also Field Lark.

Length: 10 to 11 inches. A trifle larger than the robin.

Color: Male—Upper parts brown, varying from chestnut to black; crown streaked with brown and black; throat and chin yellow; a conspicuous black crescent on breast; underneath yellow, shading into light, streaked with brown. Outer tail feathers chiefly white, conspicuous in flying; legs long and strong, with feet and claws adapted for walking. Female—Paler than male.

Range: North America, from Newfoundland south; and westward to the plains.

Migrations: April. Late October. Usually a resident, a few remaining through the winter.

Do you know this lark that wears a black crescent on his yellow vest and whose coat resembles in color the bare, bleached meadow over which he flies? In late February or early March as you walk along the fields of a country road this bird may startle you with its clear, clarion call, or rather weird whistling. As he flies from you, the white in the outer tail feathers shows plainly. There is no mistaking him as he utters his twittering flight notes and then rests in some tree or perches on a fence, to give you the joy of his sweet liquid song.

Nest of the Meadowlark

He has come to take the chinch bugs from your cornfields. Oh, he will take the cutworms, ground beetles and caterpillars too. But where is there a bird that will eat as many grasshoppers as the meadowlark? In the month of August, seven out of every ten insects eaten are grasshoppers. Besides, in early spring he eats a great many of the remaining ragweed, smartweed and barn grass seeds. Do you know of a more valuable bird to the farmer? Can he not afford to protect their nesting places in his fields and meadows?

Meadowlarks build flat upon the ground. The nest is made chiefly of grassy materials with the near-by grass stems drawn together into an arched roof which, in a measure, serves the double purpose of shelter and concealment. From three to six white eggs, mottled with brown, are laid.

The young birds are so like their surroundings in color that it is hard to find them. This makes it difficult for the well-meaning man who wishes to save the nests from destruction, for often herds of cattle or droves of horses trample upon the eggs or young. Hogs sometimes uproot the nests, and I have known of dogs and hungry cats who have followed their owners into the pastures, only to destroy young birds. If undisturbed a family of meadowlarks may raise three broods or as many as eighteen larks in one season. Think what that would mean to the farmer!

The Road Home

It's just a common country road,
Leading, who cares where?
An old rail-fence crawls by its side,
Fallen here and there.

A purple thistle stands as guard
Lest strangers venture nigh,
A bursting milkweed sends out ships
That lazily drift by.

A meadowlark calls plaintively,
Hid by the tall green grass;
A saucy sparrow cocks his head
To watch me as I pass.

Why is it that I praise this road
That looks just like the rest?
Because it is the road to "Home,"
That's why I love it best.

—*Alice M. Clark.*

May

What does the lark in the meadow sing?
"Be glad;"
What are the words that the breezes bring
Over the hills, and what is the thing
That is sung by the rushes beside the spring?
Listen—the song of the breezes and birds
Is a song of joy that has two brave words,
"Be glad."

What do the waves to the pebbles say?
"Be glad;"
What are the words of the thrush's lay?
"Be glad;"
Why is the thorn with its blossoms gay?
Why are the orchards a-bloom today?
Why are the lambs in the field at play?
God is teaching the world again
To picture His love and to say to men,
"Be glad."

—*S. E. Kiser.*

Meadowlark

The cheerless remnant of the snowdrift lies
Along the fields, and there are wintry skies,
Whose chilling blasts assail thee, Meadowlark.
I know not how you find subsistence here
Among the withered herbs of yester year;
I grieve for your uncertain days—but hark!
I hear your brave notes calling, loud and clear.

—*Anon.*

Red-headed Woodpecker

Length: 8.5 to 9.75 inches. Slightly smaller than the robin.

Color: Male and Female—Head, neck and throat crimson; breast and underneath white; back black and white; wings and tail blue black; broad white band on wings conspicuous in flight.

Range: United States, east of Rockies and north as far as Manitoba.

Migrations: Irregular. Most commonly seen in autumn, and rarely resident.

The red-headed woodpecker is the one usually despised by many farmers and fruit growers. And too often they let their boys put a price upon his head because he comes for a few berries or takes some worm-eaten cherries from their gardens and orchards. But do you know that he gets some of his food on the wing, and that beetles and grasshoppers form more than one-third of it? He also gets some of his food from the ground, taking the insects that lurk in the leaves and grasses. Then why begrudge him an occasional dessert when berries are in season?

The red-headed woodpeckers are a noisy set in the springtime, beating their err-rat-tat-toos, rolling love-calls from the resonant limbs. Drumming on the dry, hard wood, pecking and drilling into the coarse bark, shrieking from the tree tops, they are as jubilant as a corps of drum-majors just before a battle.

Red-headed Woodpecker

Give the child an outline of this bird to color according to the plate of the Red-headed Woodpecker.

Other Woodpeckers

Would not winter be a songless, cheerless season if it were not for the little downy woodpecker who comes to our dooryards for his daily allowance of bone and suet? Of course Downy doesn't sing, but he pecks and eats and chats in such a cheery way that we are all the happier for his visits.

Downy Woodpecker

Do you know this woodpecker, the smallest member of his family? He has black and white spotted wings, a white streak down the center back, a red or scarlet stripe on the back of his head and a light breast.

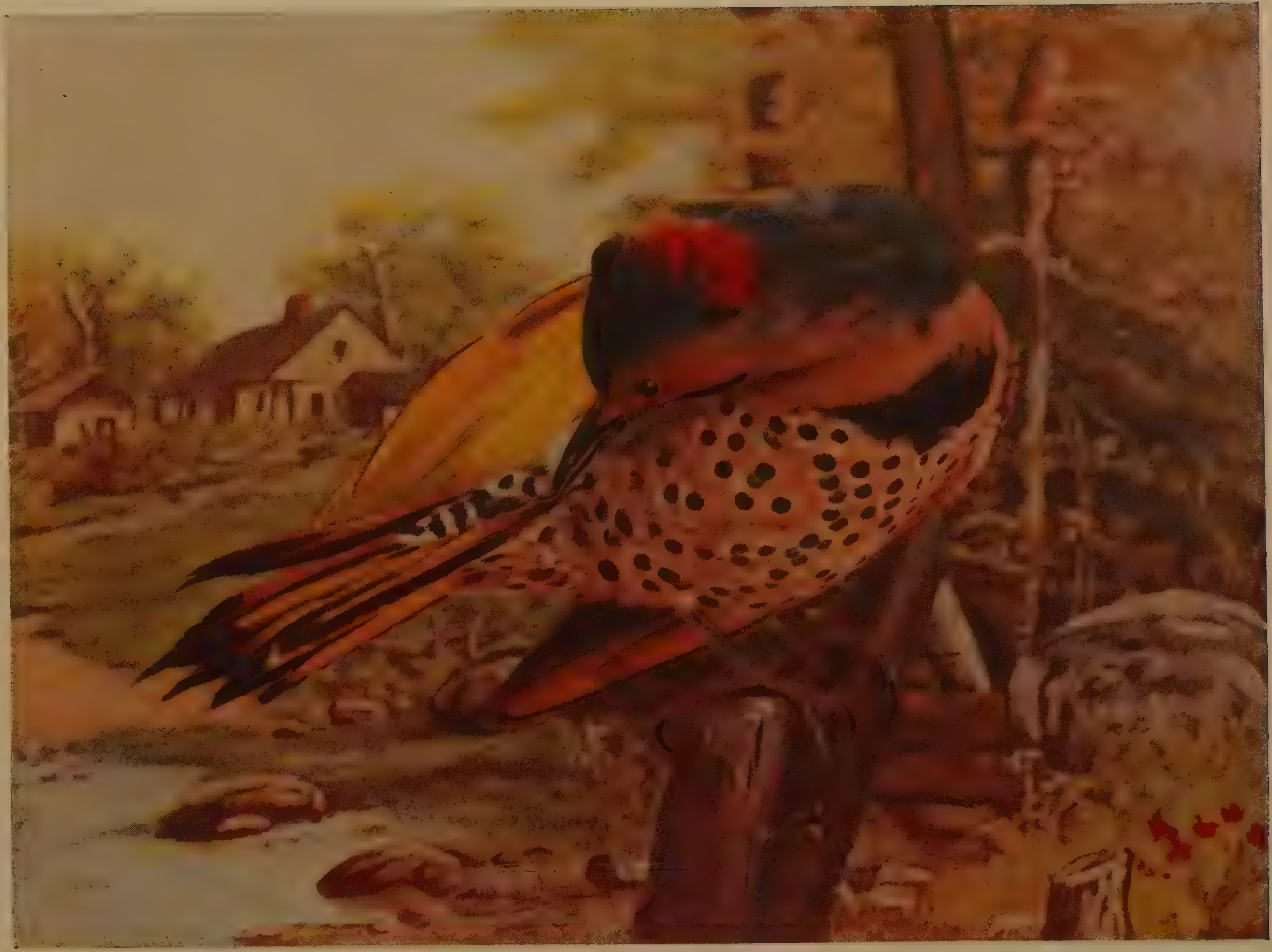
Look and see how well adapted his body is for tree-climbing. His four toes, two in front and two behind, like little pinchers, clinch the bark firmly; when resting, his stiff tail feathers serve well as a kind of prop or stay. His bill is strong and stout and serves him as a handy tool as well as a musical instrument. One time he is using it as a chisel to cut a hole into the dead wood, at another time it becomes a sounding-fork to send a message to his mate, or to locate an embedded worm, for Downy is the feathered friend of our fruit and forest trees. It is he who comes to our orchards for codling moths, curculios, and for all kinds of wood-boring insects. So do not fail to coax him and his mate to your apple trees. Put up an old, dead trunk in which little Mrs. Downy can nest. At the bottom of the hole on a bed of fine chips she will lay her glossy white eggs.

The hairy woodpecker is very much like the downy in his looks and habits, except that he is a larger bird, and has his outer tail feathers pure white, whereas the downy's are white marked with black.

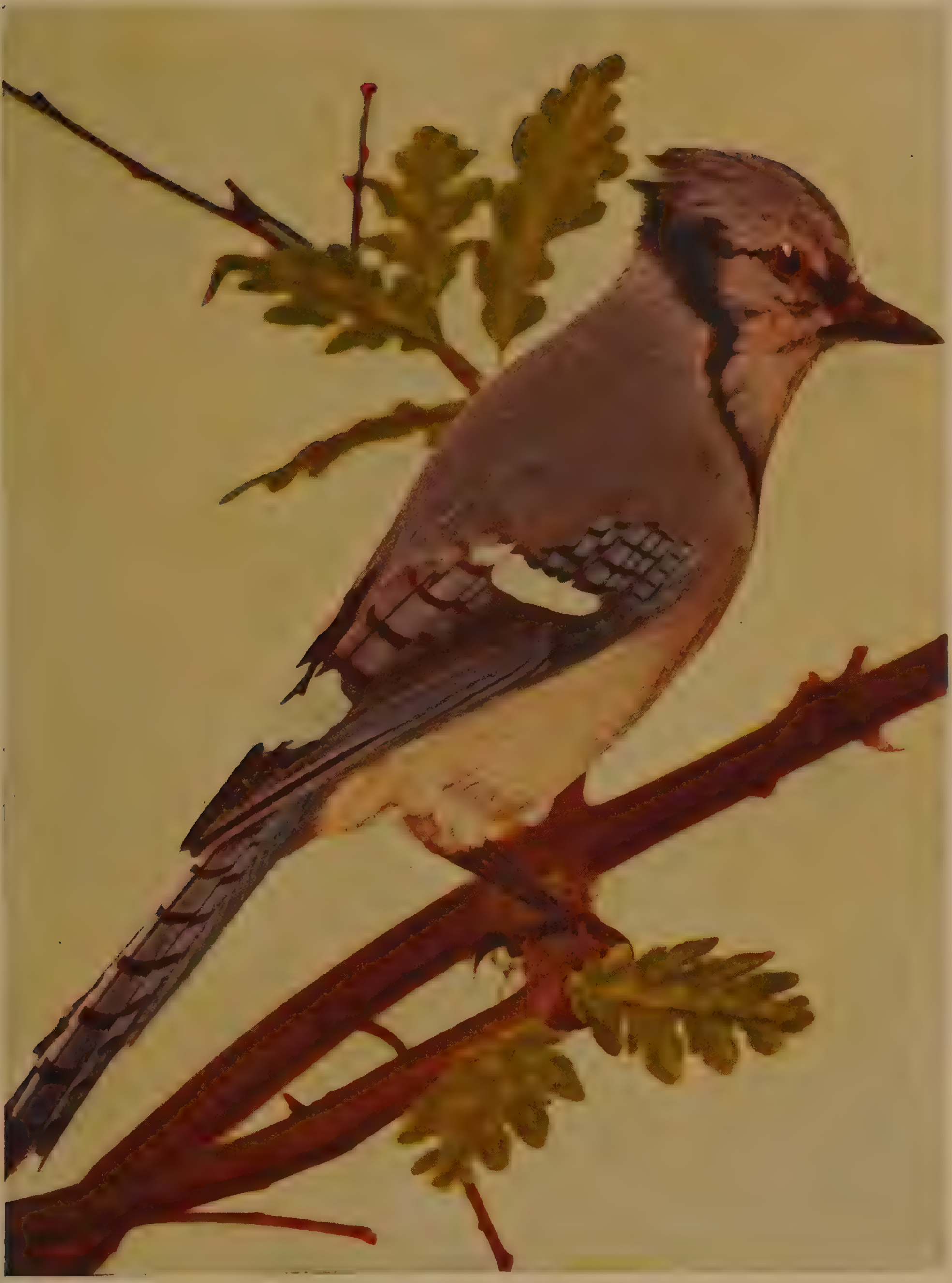
A Bird Riddle

Do you know a little bird
That in mourning shades is dressed:
Black and white upon his wings,
Black and white upon his head;
Underneath, a bit of white
On his pretty throat and breast;
While above upon his nape,
Gleams a shining bow of red?

Answer—The Downy Woodpecker.



FLICKER
¾ Life-size



AMERICAN BLUE JAY
⅗ Life-size

Flicker

Called also Yellow-hammer and High-hole.

Length: 12 to 13 inches. About one-fourth larger than the robin.

Color: Male and Female—Head and neck bluish gray, with red crescent across back of head, and black crescent on breast. Male has black cheek patches; golden brown above, shading into brownish gray, barred with black; underneath whitish, tinged with brown, and thickly spotted with black; wing linings, shafts of wing and tail quills bright yellow; above tail white.

Range: United States, East of Rockies; Alaska and British America, south of Hudson Bay.

Migrations: Commonly seen from April to October. Usually resident.

Almost every boy knows the flicker who flaps himself against a tree as if he were blown there, but not every child knows that the flicker, high-hole or yellow hammer is a woodpecker. The flicker is the largest one of our common woodpeckers. I wonder if you know this big, stocky bird, which, perhaps, has as many colors to his credit as Joseph's coat. If you see a big, brown bird with a white rump and a red patch on the back of his neck, you may be quite sure that it is a yellow-hammer or flicker.

The flickers are migratory; only a few remain North for the winter, and these usually stay in the holes or hollows of dead trees.

Have you seen the flicker on the ground probing his bill into an ant hill? He is a great ant eater. The Ohio State Experiment Station reported that one flicker's stomach contained more than three thousand ants. His bill and tongue are well suited for ant hunting; with his long, hard bill he probes the ant nest and draws the ants out with his tongue, which is as rough as a file and as sticky as fly paper. In the summer, when he is getting a part of his food from the ground, he eats a great many crickets and grasshoppers.

But you do not know the flicker till you have seen his many manoeuvres at mating time, and heard his "wi-chew, wi-chew," calls to his mate. Picking, cutting, hammering, the work continues till the old dead tree-trunk or bare, hard telegraph pole has a hole large enough for a nesting-place and which may be used as a winter home.

Crow

Called also Corn Thief.

Length: 16 to 17.5 inches.

Color: Male—Glossy black with violet reflections. Wings appear saw-toothed when spread, and almost equal the tail in length. Female—Same except color is less brilliant.

Range: Throughout North America, from Hudson Bay to the Gulf of Mexico.

Migrations: March. October. Summer and winter resident.

> Blow, winds, blow! I'm only a poor old crow.
> Who loves me? Not one, I see.
> Caw! Caw! Snow! Snow! Nothing but snow!
> I'm hungry and cold; is that nothing to thee?

Poor old crow! He has a hard time of it. In winter he nearly freezes and starves to death; in summer, no matter how hungry he may be, every "scarecrow" is motioning him away, and every man is after him with his shotgun when he and his tribe enter the poultry yards and cornfields.

We shall have to admit that the crow is somewhat of a rascal when he destroys bird's eggs and nestlings, carries off our young chicks and turkeys and spoils the roasting-ears in our truck patches and cornfields. But let us not forget the good he does. All through the summer he is eating grasshoppers. Besides, he eats many bugs, cutworms and caterpillars. So, after all, the crow is "not so black as he is painted," and probably does more good than harm.

Perhaps you have seen a bare tree in the woods, with a mass of black twigs and sticks lodged in an upper crotch, which looked like an accumulation of cast-offs of the tree-tops. Take a good look at it; it may be an old crow's nest, for crows' nests are constructed of very coarse materials, as dry leaves, strips of bark and rough sticks. But when old mother crow is sitting, early in the spring, on the newly-built black pile, there is something about the harmonious blackness of nest and bird that makes one admire it.

Jim Crow

When Jim Crow became a member of our family, he was very young and could hardly balance himself upon his slender legs. We fed him upon raw eggs and scraps of raw meat until the bird grew strong and the black feathers became smooth and glossy and the bright eyes grew brighter and Jim Crow changed into a beautiful bird.

A smart bird was Jim, devoted to his master and mistress, hailing them with a loud caw whenever their steps were heard and hopping about to greet them.

Jim could talk a little and would have acquired much more knowledge of the language had he lived longer. He would spread his sable wings, purple in their deep black, and call in a hoarse voice, "Come on, Come on," very distinctly. He would greet his master with "Hello, Pa-pa," and delighted in feeding from his hand. He knew when the butcher boy came with the meat and was at the cook's side when she received the basket, croaking for his share.

Jim delighted in a plunge bath and would splash away in an earthen crock a dozen times a day if it was filled for him. He also loved red and blue, and if ladies called at the house dressed in those hues the lordly young crow would become frantic, spreading his wings and tail, bobbing his head from side to side and circling around with loud cries of "Come on, Come on," to the great amusement of all. He would even go to the gate with the visitors and have to be brought back.

He would often eat corn with the chickens and would act very greedily, rapidly filling up his bill with the precious grain, rushing away and hiding it, then coming back for more; so unless the chickens made haste Jim got the lion's share.

Jim enjoyed his life in the long rich Kentucky blue grass and would sun his glossy feathers upon the emerald sward, and many a truss of scarlet geranium was caressed too rudely by his powerful bill. He was a remarkably intelligent bird, perfectly contented with his home and petted and loved by his mistress. But poor Jim was hurt one day by a stray dog and closed his bright eyes in farewell to the beautiful world in which he had so much enjoyment.—*Fannie A. Carothers.*

Blue Jay

Length: 11 to 12 inches. A little larger than the robin.

Color: Male and Female—Blue above; black band around the neck; wings and tail blue, banded with black and tipped with white; head finely crested; bill, tongue and legs black.

Range: Eastern coast of North America to the plains, and from northern Canada to Florida and Texas.

Migrations: Permanent resident. They move about in flocks looking for happier hunting grounds, but do not migrate.

The blue jay, a very common blue bird with black stripes on the wings, a light-grayish breast and a high crest or topknot, is a member of the crow family. He is not so much of a plunderer as the crow, and does a great deal of good by eating many insects that feed upon the foliage of trees and plant life. About one-fifth of his food in the summertime is grasshoppers, and he is also known to feed upon the larvae of the gipsy moth that is so destructive to our forest trees.

In late autumn on a gray November day when the trees are bending before the strong wind, what sounds can be more in keeping with the tumultuous uproar than the clamorous calls of the blue jays? While other birds are seeking the shelter of deep woods, they seem to delight in screeching their shrill cries from the isolated trees of the open woods and fields. Swaying treetops, creaking branches, and the rustle of wind-driven leaves do not dampen their spirit. Instead, one hears their high-pitched notes above the roar of the warring forces.

The Blue Jay

Let the child trace this outline of the Blue Jay and color it, following the colors in the plate of the Blue Jay.

When the bleak December landscape has been whitened by the first snow of winter, what an attractive picture they make! Now the whole aspect of the scene is changed, for the jays have taken a few acorns from the snowy earth and have flown into the oaks, where they are rapidly ripping them open. See how cleverly the jay works! His strong toes hold the acorn securely against the hard branch. With his stiff bill he makes the incision, tearing away a full-length strip of the nut. The rest is easy enough, hammering, shredding, eating, he continues till his appetite for nutty food is gratified.

Most familiar are his rasping calls and noisy gibbering, especially in autumn, when he is joined by others of his tribe. During the breeding and moulting seasons he has little to say; only an occasional scream escapes him as he sallies forth on a pillaging tour, puncturing and destroying the eggs and young of other birds.

Because of his meddlesome and tantalizing actions, the jay is very unpopular in bird society. When he approaches a tree in which other birds have congregated there is a sudden flurry of wings, and the birds take their departure.

The Blue Jay

Oh, blue jay up in the maple tree,
Shaking your throat with such burst of glee,
  How did you happen to be so blue?
Did you steal a bit of the lake for your crest,
And fasten blue violets into your vest?
  Tell me, I pray you, tell me true.

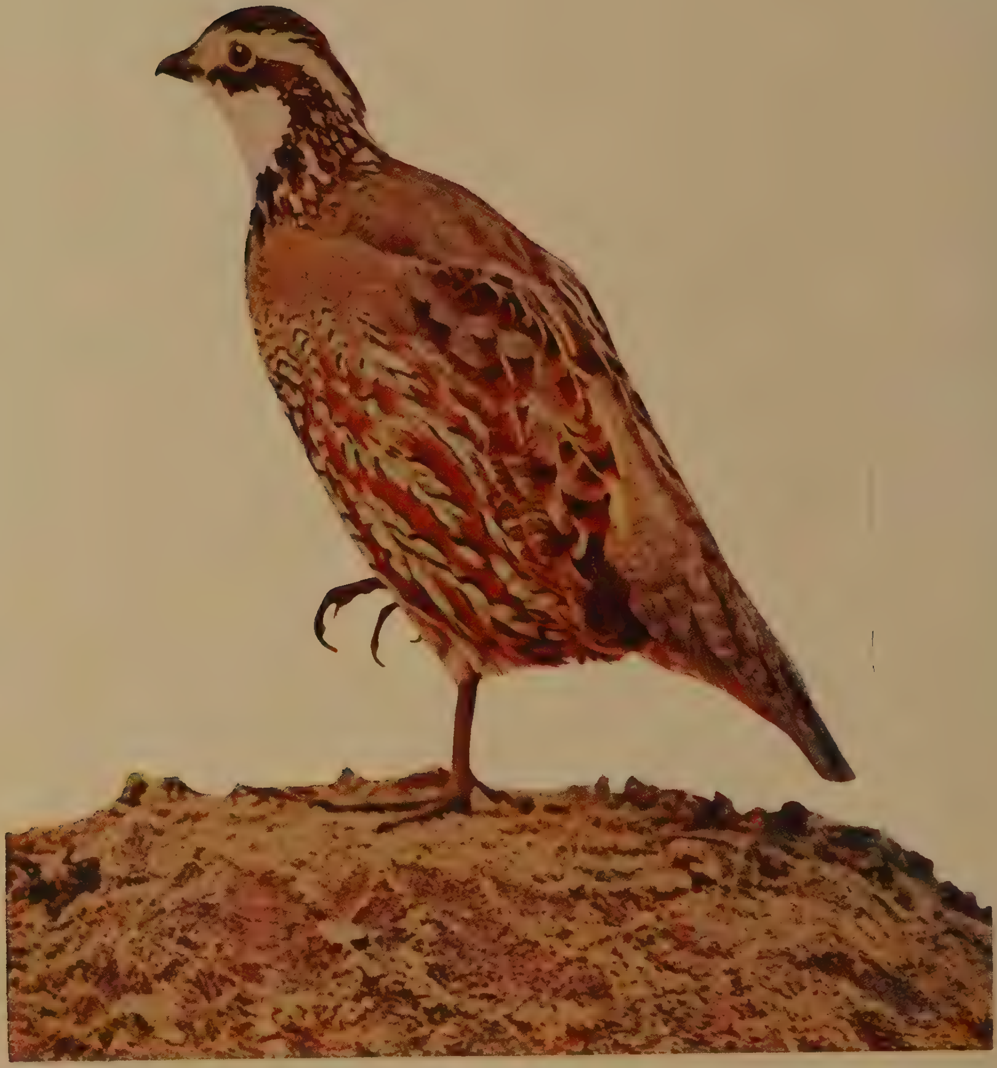
Did you dip your wings in azure dye,
When April began to paint the sky
  That was pale with the winter's stay?
Or were you hatched from a bluebell bright,
'Neath the warm gold breast of a sunbeam light,
  By the river one blue day?

Oh, blue jay up in the maple tree,
A-tossing your saucy head at me,
  With ne'er a word for my questioning,
Pray cease for a moment your ting-a-link,
And hear while I tell you what I think,
  You bonniest bit of the spring.

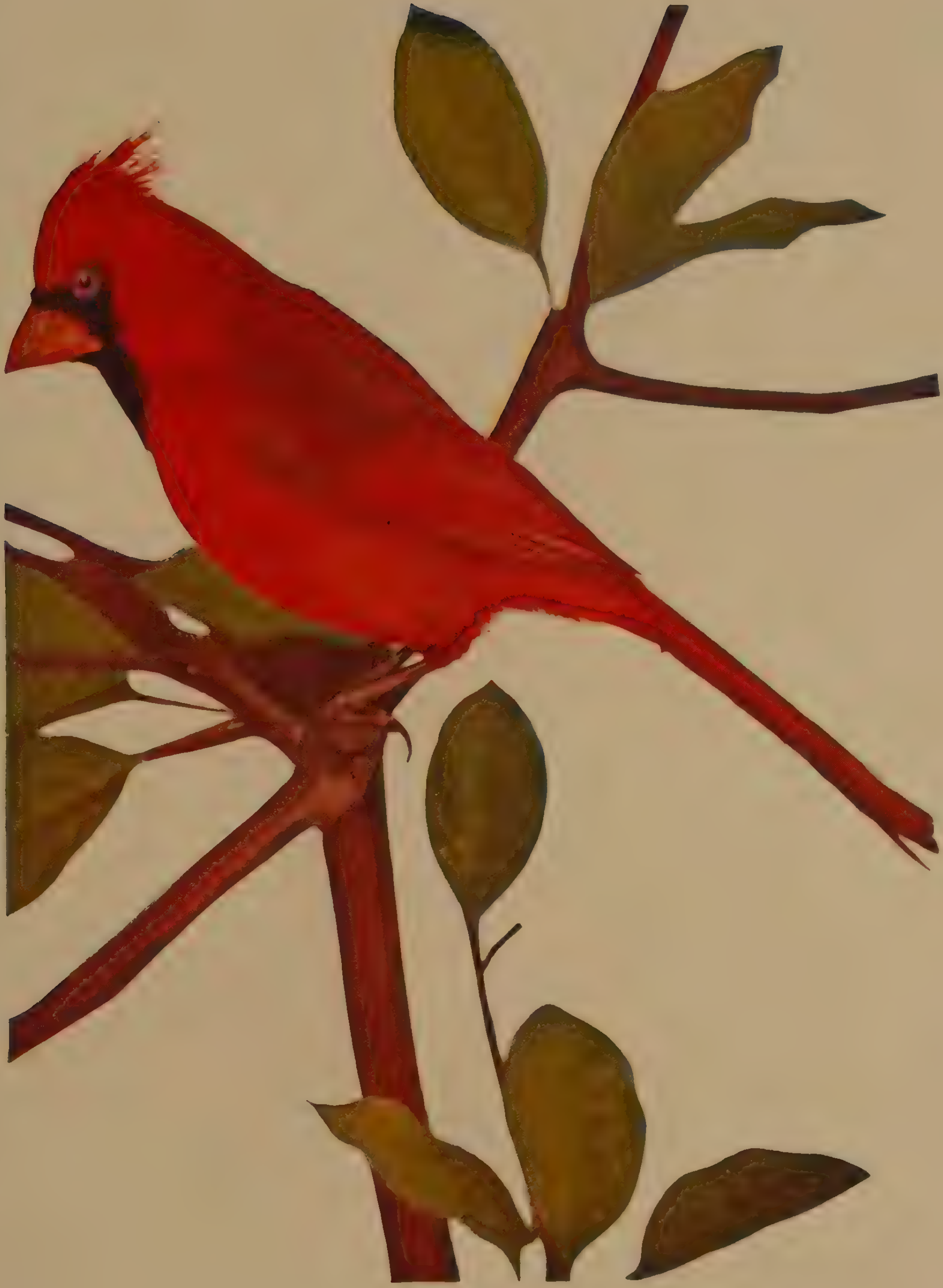
I think when the fairies made the flowers
To grow in these merry fields of ours,
  Periwinkle and violets rare,
There was left of the spring's own color, blue,
Plenty to fashion a flower whose hue
  Would be richer than all and as fair.

So, putting their violets together, they
Made one blossom so bright and gay,
  The lily beside it seemed blurred;
And they said, "We will toss it in air,
So many blue blossoms grow everywhere,
  Let this pretty one be a bird."

—*S. H. Sweet.*



BOB-WHITE
⅔ Life-size



CARDINAL
⅞ Life-size

Bob White

Called also Quail.
Length: About 10 inches.
Color: Male—Upper parts reddish brown, variegated with black, buff, and gray; the forehead and band on breast black; cheeks, throat, breast and underneath white, the latter barred with black. Female—Like male, except forehead, cheeks and throat buff.
Range: From Maine and Minnesota to Gulf of Mexico, East of the Mississippi.
Migrations: Resident where found.

Is the Bob White, or quail, on the list of game or song-birds in your state? How glad every boy and girl should be that men are prohibited from killing this valuable bird! Had laws not been made protecting the Bob Whites, they might soon have met with the same fate as the passenger pigeons, which are now considered almost extinct in this country. Men were not content with killing one or two quail but more often the whole flock was shot and bagged.

Bob Whites are found throughout the eastern part of the United States and because of this fact they should be generally protected. No other bird is more useful to the farmer than this little piper of our woods and fields.

Have you thought what it means to have a flock of quail near your country home? Here are some of the things the scientific men at our nation's capital say quail will do for you: Eat the Colorado potato beetles that destroy your potato patches; take the beetles on your cucumber vines; feed on the cutworms in the corn and clover fields; and devour the boll worms and cotton boll weevils that destroy the cotton crop. Besides, in the winter season, one-half their food is weed seeds taken from the fields and meadows. Would you not vote to protect a bird that is so useful to every farm and field?

The Quails' Quadrille

One who loves birds and who is so much in sympathy with them as to make it appear sometimes that they have taken her into their "order," had a charming glimpse, a few years ago, of a covey of quails in one of their frolics. She described it as follows:

"I never hear the call of 'Ah, Bob White!' or catch a glimpse of those shy little vocalists, that I do not think of how I once surprised them in the prettiest dance I ever saw. I had heard of the games and frolics of birds and have often watched them with delight, but I never saw any bird-play that interested me as this, that seemed like a quadrille of a little company of quails.

"They were holding their pretty carnival at the side of a country road along which I was slowly strolling, and I came in sight of them so quietly as to be for a time unobserved, although they had two little sentinels posted—one at each end of the company.

"Between these bright-eyed little watchers, always on the alert, a dozen or more birds were tip-toeing in a square. Every motion was with all the grace and harmony which are nature's own. At some little bird-signal which I didn't see, two birds advanced from diagonal corners of the square, each bird tripping along with short, airy, and graceful steps, something like what we imagine characterized the old-time 'minuet.' Each bird, as the partners came near each other, bobbed its head in a graceful little bow, and both tripped back as they came to their places in the square. Immediately the birds from the two other corners advanced with the same airy grace, the same short, quick, and tripping steps, saluting and retreating as the others had done.

"A wagon driving along the road disturbed the band of dancers, who scudded away under the leaves, through the fence, into the deep grass of the field beyond. When the team had passed out of sight and the ballroom was again their own, back came the pretty revelers stealthily, their brown heads uplifted as their eyes scanned the landscape Seeing no intruder, they again took their places the same as before and began again the same quadrille—advancing, meeting, bowing, and retreating.

"It was the prettiest and most graceful little 'society affair' you can imagine. There was no music—no song that I could hear—yet every little bird, in every turn and step while the dance was on, moved as to a measured harmony.

"Did the birds keep 'time—time, in a sort of runic rhyme' to melody in their hearts, or to a symphony I could not hear, but which goes up unceasingly like a hymn of praise from nature's great orchestra? I longed to know.

"In my delight and desire to learn more of the bewitching bird-play, I half forgot I was a clumsy woman, and an unconscious movement betrayed my presence. The little sentinel nearest me quickly lifted his brown head, and spying me gave his signal—how, I could not guess, for not a sound was uttered; but all the dancers stretched their little necks an instant and sped away. In a moment the ground was cleared and the dancers came not back."—*Mrs. A. S. Hardy.*

Bob White

There's a plump little chap in a speckled coat,
And he sits on the zigzag rails remote,
Where he whistles at breezy, bracing morn
When the buckwheat is ripe and stacked the corn;
"Bob White! Bob White! Bob White!"

Is he hailing some comrade blithe as he?
Now I wonder where Robert White can be?
O'er the billows of gold and amber grain
There is no one in sight,—but hark again!
"Bob White! Bob White! Bob White!"

Ah! I see why he calls; in the stubble there
Hide his plump little wife and babies fair!
So contented is he, and so proud of the same,
That he wants all the world to know his name;
"Bob White! Bob White! Bob White!"

The Boy Who Never Sees

God help the boy who never sees
The butterflies, the birds, the bees,
Nor hears the music of the breeze
When zephyrs soft are blowing.
Who cannot in sweet comfort lie
Where clover blooms are thick and high,
And hear the gentle murmur nigh
Of brooklets softly flowing.

God help the boy who does not know
Where all the woodland berries grow,
Who never sees the forests glow
When leaves are red and yellow,
Whose childish feet can never stray.
For such a hapless boy, I say,
When Nature doth her charms display,
God help the little fellow.

—*Nixon Waterman.*

Cardinal Grosbeak

Called Cardinal, Virginia Redbird, Virginia Nightingale.

Length: 8 to 9 inches. A little smaller than the robin.

Color: Male—Brilliant cardinal red; chin and band around bill black; has red crest, and stout red bill. In winter, wings are tinged with gray. Female—Brownish yellow above, shading to gray below; tail shorter than the male's; crest, wings and tail reddish; breast sometimes tinged with red.

Range: Eastern United States. Is resident throughout the year in states south of the Ohio River, and in summer in more northern states.

Migrations: Resident throughout the winter in localities where they have found their way. Travel in flocks.

Isn't it pleasant for us to have some of the birds with us the year round? The bird books call them permanent residents, and so they are, and the cardinal is one of them. The structure of his body is such that he too must be placed in the Sparrow family.

The cardinal is our redbird, and a good name it is for him, for he wears a "British red coat and crest" the year round, but have you noticed his black throat and the brownish tinge in his wings? His mate's costume is quiet and subdued. She is an olive-brown bird with a red crest and tail.

Every child, perhaps, knows a boy who can imitate the cardinal's song, as it is such a favorite. "Whew-ee, whew-ee, whuit, whuit, whuit, purty, purty, purty," he whistles. Then the boy whistles the refrain. High up in the tree top the cardinal listens to the lad below. A moment's pause, then with more vigor and spontaneity than ever the bird pours forth such an outburst of song that his whole body trembles with the ardor of its passion. Both the male and the female cardinals sing; the latter's song is very sweet and less explosive.

Cardinals nest in vines and low bushes a few feet from the ground. Their eggs are white, or bluish-white, with brown spots and streaks, and usually from three to four in number.

What the Twins Learned about the Cardinal

"Cheo-cheo-cheo-cheo!" Over and over again came the strong, rich whistle, like the high notes of a fife.

"Is a band a-coming?" cried Little Girl Twin, rushing out to the gate. Auntie Lou ran out too. "Doesn't that sound like home!" she exclaimed. She had come up from Virginia on a visit.

For it wasn't a fife. It was a cardinal, or, as it is called in its southern home, a Virginia redbird.

Auntie told the Twinnies that cardinals are shipped to Europe in cages. People there call them Virginia nightingales.

Both Mr. and Mrs. Cardinal sing from March until September. It was early in May now, and the cardinals were hunting for a place to build their nest.

They chose an evergreen shrub, in the fence-line near the corn field. For they like to eat grain.

Grandpa told the Twinnies that cardinals always built in a laurel or holly tree, if they could find one. By and by there were pale-gray, brown-marked eggs in the bulky, loosely-made nest in the evergreen.

"You'll soon have a whole flock of cardinals," said Auntie, "for they raise two broods a year. So be just as nice to them as you can, for cardinals will stay all through the year if they like their home."

"Oh, we'll be good to them," promised the Twinnies. "We want them to stay. They're so pretty."

"The trouble is," said Grandpa, "that bad boys, and men too, shoot these lovely birds. They are an easy mark for a hunter, such a brilliant cardinal red."

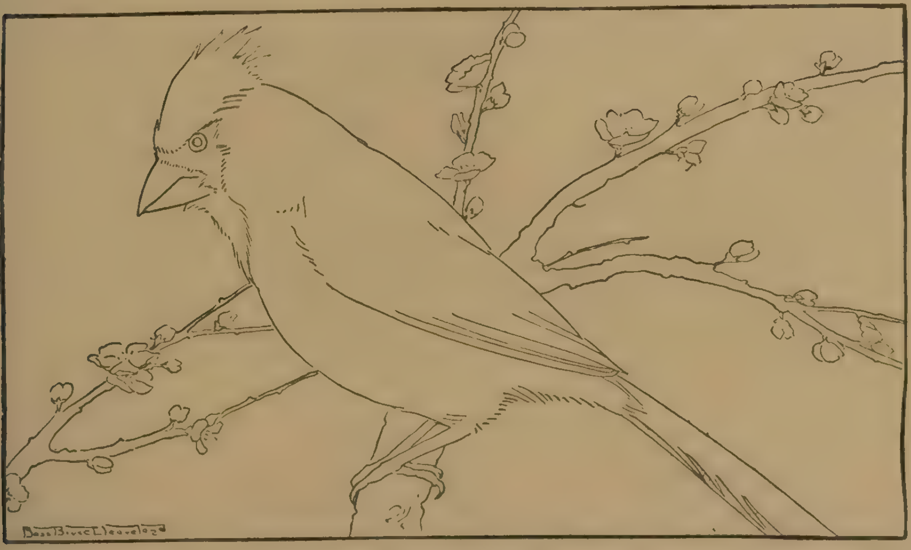
The bird's name comes from the color of his handsome red suit. He has a black band around his bill. His beak is stout and red, and his crest is red. He is not quite so large as a robin.

Auntie told the Twinnies: "Mrs. Cardinal has more yellow-brown than red in her suit. The mother birds have plainer dresses, so that their enemies can't see them so easily, and steal their eggs or baby birds."

Grandma told the children: "Every year more cardinals come up from the South to live in the North all the year. So if the hunters don't get them, we'll have some pretty pictures this winter. The cardinal looks so pretty on the evergreens, or against the white snow."

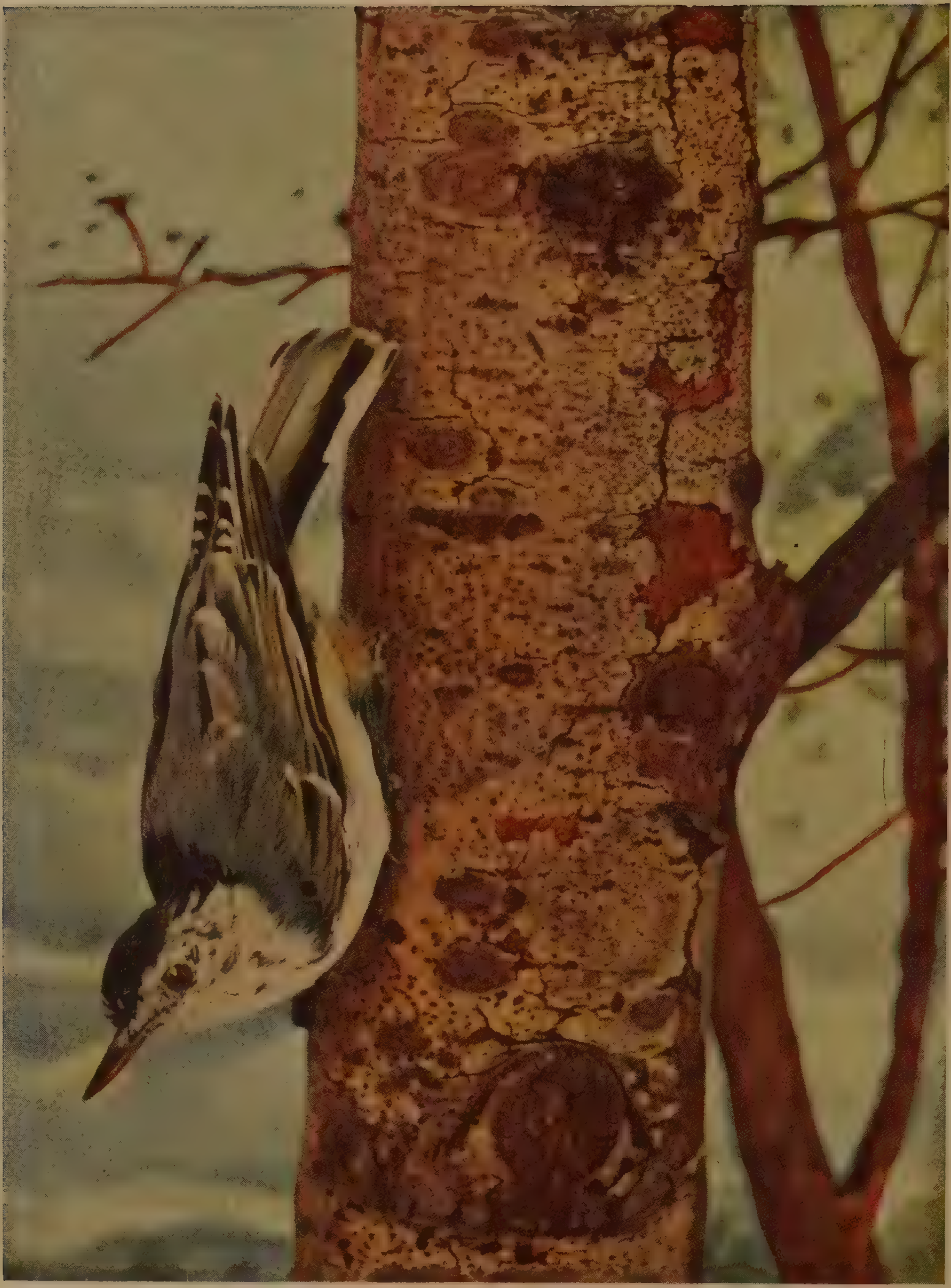
"See how dignified he is. He doesn't walk on the ground like a robin. He won't come lower than the evergreen shrubs. He is a haughty little prince," laughed Auntie Lou.

—*Jean Halifax.*

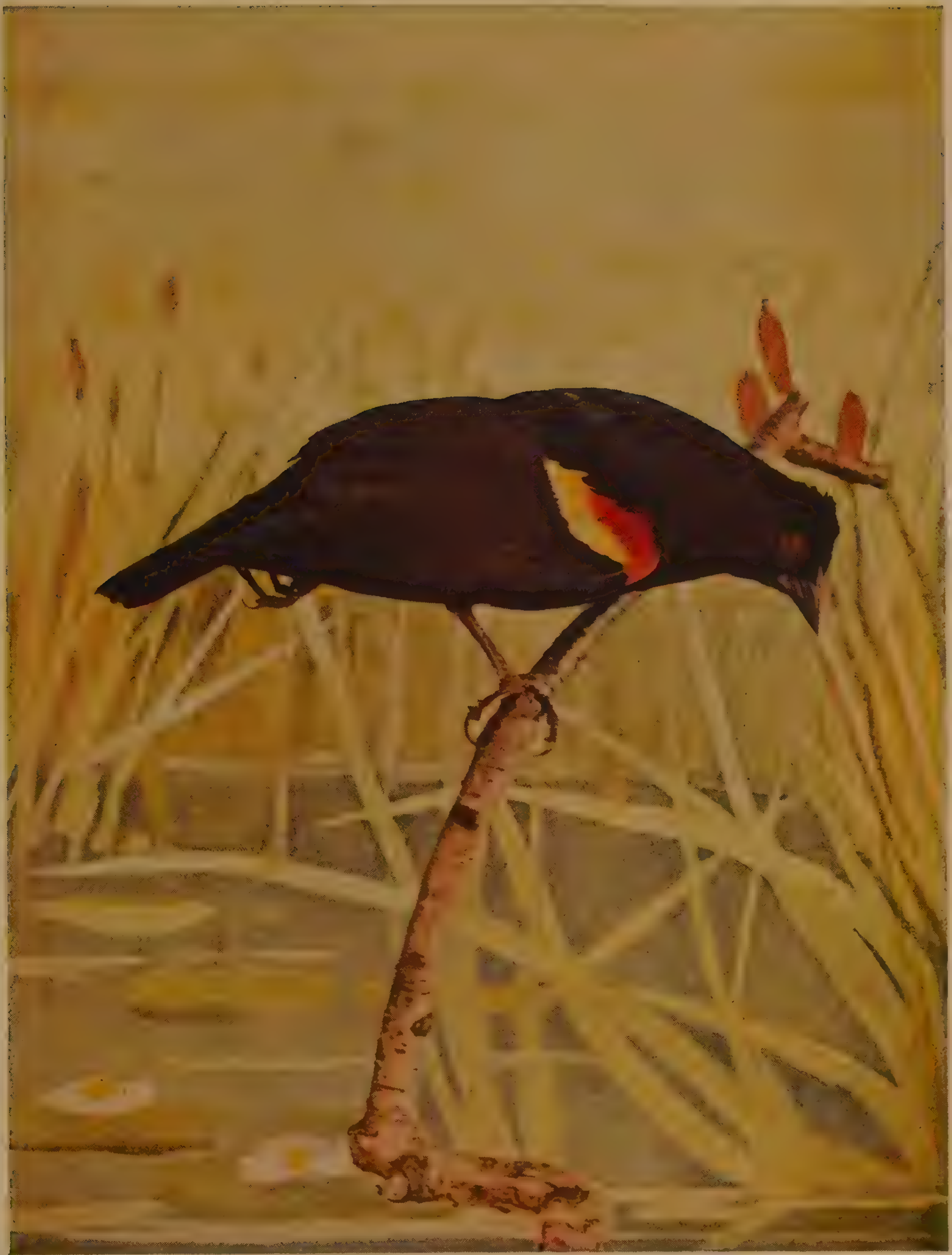


The Cardinal

Trace this outline and transfer to water color paper. Give it to the child to color.



WHITE-BREASTED NUT HATCH
Life-size



RED-WINGED BLACKBIRD
½ Life-size

White-breasted Nuthatch

Called also Tree-mouse.

Length: 5.5 to 6 inches. A trifle smaller than the English Sparrow.

Color: Male and Female—Upper parts slate color, top of head and nape black; wings dark slate, edged with black; tail feathers brownish black, with white bars; sides of head and underneath white, shading to pale reddish under the tail. Body flat and compact. Bill longer than head.

Range: British provinces to Mexico. Eastern United States.

Migrations: October. April. Common winter resident.

Up and down the tree he climbs, this white-breasted nuthatch of mine, his black cap well drawn back from his head and his light vest showing plainly under a coat of gray and black. Do you get the picture? Crown black; back gray; breast and underparts white; sides tinged with light brown. Many people call this bird a sapsucker, but he is not a sapsucker at all.

Up and around the tree he goes, pecking away and keeping a sharp lookout for a nice mess of eggs that may lie half-hidden behind a loose bit of bark, or for a good, fat grub nicely stowed away in the wood, a rich morsel for the nuthatch. Down the trunk he goes again, head first, then zigzagging up and around it as if playing a pretty "peek-a-boo" with you, but all the time he is hunting for food; for the nuthatch gets its daily fare chiefly from the eggs, larvae and moths that are found in the bark of our fruit and forest trees. He remains with us the year round, and all through the long winter season he is busily engaged cleaning up the trees. Was there ever a more faithful worker? Almost daily you can hear him call "Yank, Yank" or sometimes give a low, chuckling chatter from some tree in your dooryard. Hang out a bit of suet for him or place some broken peanuts on a shelf and he will come again.

Barn Swallow

Length: 6.5 to 7 inches. A little larger than the English sparrow. Looks larger because of its wide wing-spread.

Color: Male—Glistening steel blue above, shading into black; chin, breast and underneath chestnut brown and buff; a partial collar of steel blue. Tail slender and forked. Female—is smaller and paler, with tail shorter and less prominently forked.

Range: Throughout North America. Winters in tropics of both Americas.

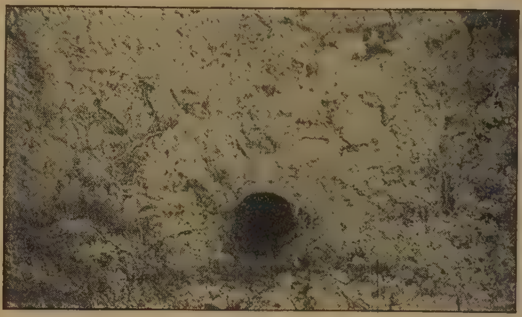
Migrations: April. September. Summer resident.

Swallows

How would you like to make a journey from New York to Panama each autumn and return the following spring? That is just what many of our swallows are doing, spending their winters in the South and their summers in the North. They are rapid flyers; their long, narrow, triangular-shaped wings and forked tails help them to steer swiftly through the desert air. Some days they cover hundreds of miles; they need not stop even for meals, for they take their food on the wing, as swallows feed chiefly upon insects that swarm about and fly through the air. Open-mouthed, they dart over the meadow catching May flies and beetles; or over a stagnant pond where mosquitoes swarm; flies, moths, bees and wasps disappear before the migrating horde.

Of the half-dozen swallows that are found in the eastern part of our country, two are very common species; they are the barn swallow and the purple martin. Have you a star, a crescent or a diamond cut into the gable ends of your barn, through which the barn swallows can come and go? The barns we used to build were not complete without their openings for the swallows, but alas! times have changed.

Every child may know the barn swallow by his dark, steel-blue back, rusty red breast and forked tail. By all means, let these swallows into your barns, where they can place their mud cradles upon the beams. They are sociable creatures, even if a bit gossipy, and love community life. Not only one pair but several pairs, and sometimes a number of couples will build in one barn, and on one beam there may be several nests. No doubt you have seen them bringing the mud plaster for their adobe huts, and the fine grasses and feathers for lining the interiors; and perhaps you have seen them feeding their young with soft, meaty pellets made of insects.


Bank Swallow's Nest

The purple martins expect you to have their houses ready for them as they return from their southern sojourn in May. Like men, these birds seem to have improved with the flight of time; they no longer prefer the old, damp, hollow trees but desire respectable flats in well-made houses. The more stories there are in the house, the better the martins like it, for they too are communists. Listen to their low, merry chatter as they inspect the flat "to let." Are you sure you know the purple martin from other swallows? The male has a glossy, midnight-blue back, and is grayish-white underneath; the female's plumage is more dull.

The bank swallows nest in colonies along a clayey or sandy river bank, in which they excavate their tunnels from two to three feet in length. The eggs of the bank swallows and purple martins are pure white.

Red-winged Blackbird

Called also Swamp Blackbird; Red-winged Starling.

Length: Variable, 7.5 to 9.8 inches. Usually about an inch smaller than the robin.

Color: Male—Coal black. Shoulders scarlet, edged with yellow. Female—Feathers inconspicuously speckled with brown, black, whitish and orange. Upper wing-coverts rusty black, tipped with white, or reddish and sometimes spotted with black and red.

Range: North America. Breeds from Texas to Columbia River, and throughout the United States.

Migrations: March. October. Summer resident.

In oozy pastures where a brook lazily finds its way through the farm is the ideal pleasure ground of the red-winged blackbird. His name tells you what he looks like, but you could hardly recognize his mate. Her nest is down among the cattails and swamp grass. She thinks a good deal of that nest, and, being afraid you may harm it, she dresses so inconspicuously that you may not see her even when looking straight in her direction.

Only one brood of nestlings is raised in a season, and the young birds are ready in July to join their elders in the flock. From then till October they visit and enjoy life. The farmers complain that the blackbird is a nuisance, and object to its noisy chatterings when the flock is enjoying a social gathering. They also complain that the blackbirds eat their corn. They forget that having devoured innumerable cut-worms from it during the summer, the birds feel justly entitled to a share of the profits. It has been found that seven-eighths of the Red-wing's food consists of weed seeds or of insects injurious to agriculture.

After the nesting duties are over comes the moulting season, and then Red-wing is rather quiet. But as soon as his new suit is on, you may hear his flute, warbling "O-ka-lee," on an ascending scale which, in its liquid quality, suggests the sweet, moist, cool retreats which are his favorite haunts. When the food supply begins to wane in the autumn he goes south, but not so far but that he can be one of the first to return in March, to let us know spring is here.

Other Blackbirds

Not till you hear the blackbird's "quirk and chirque" some morning in early March do you feel that spring has come. A whole flock of blackbirds suddenly will alight in some bare tree. Listen to their pleasant chatter—"a chuck, a chirk," a thousand "squiks and squirks," and as suddenly they have gone to repeat the caucus in some other place. You call them blackbirds but they are grackles. If they are black with green and purplish reflections they are purple grackles, but if their backs are a shining, brassy bronze without the rainbow reflections they are bronze grackles.

Grackles live in large flocks the year round. It is only in nesting time that they divide into smaller bands or colonies. They generally select an isolated place where they will not be disturbed. They have no fixed law as to the elevation or location of the nest; it may be placed in a tree thirty feet from the ground or in a bush but a few feet high. The nest is coarse and bulky, made of mud and grasses. The eggs are bluish-green, spotted with brown or black. You can probably find a purple grackle's nest in some park near your home.

The grackles are great destroyers of insect pests, especially weevils, army worms and cutworms. In the fall the various colonies unite and form a great migrating horde, which in some regions numbers hundreds of individuals.

Kingbird

Called also Tyrant Flycatcher; Bee Martin.

Length: 8 inches. About two inches shorter than the robin.

Color: Male—Ashy black above; white, shaded with ash-color, beneath. A concealed crest of orange-red on crown. Tail black, terminating with a white band conspicuous in flight. Wing feathers edged with white. Feet and bill black. Female—Similar to the male, but lacking the crown.

Range: United States to the Rocky Mountains. British Provinces to Central and South America.

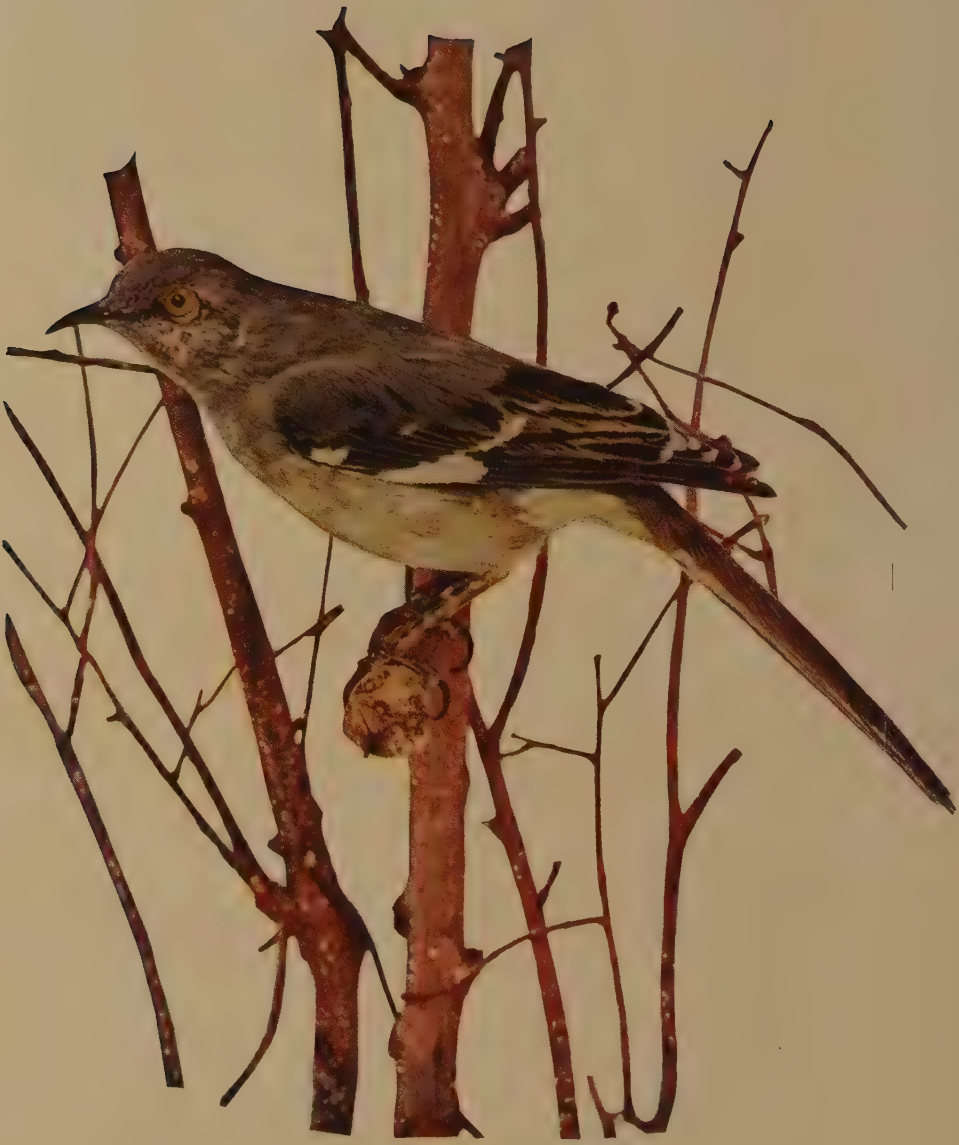
Migrations: May. September. Common summer resident.

The kingbird is a flycatcher and eats all kinds of flies, beetles, crickets, cutworms, rose bugs and grasshoppers. Farmer boys often call him the bee-bird or bee martin, and he is often accused of eating honey bees, but the accusation is unjust for it has been proven by examinations of hundreds of stomachs that kingbirds eat but very few bees, and these usually useless drones. His vegetable food consists of a few seeds and berries.

Every summer the kingbirds come to our pear trees to nest. The nest is placed far out near the end of the branch, but seldom remains exposed after the eggs are laid, for by that time the cluster of leaves almost wholly conceals the nest, as well as the sitting bird. In a nest made of grass straws and strips of bark, and lined with fine grasses, threadlike rootlets and down, mother kingbird lays her white eggs, spotted with brown and lavender. In one setting there are three eggs, in another there may be four or five. It is not an uncommon thing for her to raise two broods in one season.

One July I tried photographing a nest of young kingbirds. Climbing up the pear tree, I placed the camera six feet from the nest. What a commotion there was! The old birds fairly flapped their angry wings about my head, then they hovered piteously a few feet above the nest, then flew back to the branch where I was trying to operate the camera. They kept up their fussing until I withdrew from the tree.

Any bird putting up such a fight certainly deserves to be called a kingbird. You see now why he often drives away blue jays and sparrows, and sometimes hawks and crows.



MOCKING BIRD
¾ Life-size

AMERICAN BALD EAGLE
¼ Life-size

Mocking Bird

Length: 9 to 10 inches. About the size of the robin.

Color: Male and Female—Gray above; wings and wedge-shaped tail brownish; upper wing feathers tipped with white; outer tail quills white, and conspicuous; throat and breast are white, the latter shading towards gray.

Range: Torrid and Temperate Zones of North and South America.

Migrations: Not migratory.

North of Delaware this commonest of southern birds is rarely seen outside of cages, yet even in winter is not unknown in Central Park, New York. Slim, neat, graceful, imitative, amusing, with a rich, tender song that only the thrush can hope to rival, and with an instinctive preference for the society of man, it is little wonder that he is a favorite, caged or free. He is a most devoted parent, too, when the four to six speckled eggs have produced as many mouths to feed.

With all his virtues, the mocking bird is a sad tease. There is no sound of bird or beast about him that he cannot imitate so as to deceive every one but himself. And usually he seems to appreciate the fun and the mischief of his ventriloquism.

How the Mocking Bird Learned to Sing

As we are listening to the birds around our home today,
We hear a carol from the tree that stands across the way.
A bird is singing sweet and clear, a song that seems to be
A bit of Heaven granted us—so rich in harmony.
While we stand spellbound, held by song, the voice we pause to hear
Changes its music, and we know the mocking bird is near.
Child of the Southland, loved by all, we welcome him once more,
And wonder what new songs complete his this year's repertoire.
No wonder that this songster dear, in that far Southern clime,
Is loved by all the colored folk, who hear him all the time!
Nor is it strange that cabin lore has many tales to tell
Of how he mocks the other birds, and knows their songs so well.
Old Dinah's story runs like this: Full many years ago,
The birds met in convention, their skill in song to show.
The owl was judge, and hooted forth the cruel, hard decree
That any bird who couldn't sing, a slave must ever be.
All tried their best, the lark sang first, and pure and clear the note
That came with ease and harmony from out his little throat.
"Good!" said the owl, "we rank you first in purity of tone;
If any bird can equal this, pray let his skill be shown."
Then all in turn did try their best the lark's song to outdo,
But all who tried, though well they sang, were ranked as number two.
Until at last a plain gray bird came forward, sweet and shy,
And opened wide his swelling throat, but knew 'twas vain to try.
For this same bird was tied-of-tongue, and well he knew a song
Could never pour from out his throat, nor rank to him belong.
Then "Hoot-to-hoot!" the judge exclaimed, " 'tis shocking this to see.
A bird so hampered by his tongue, a slave he needs must be—
And to the lark I now present our sad young friend in gray,
To be her slave, and do her work, that she may sing and play."
Sad was the life of the gray bird, but sweet the heart within;
He loved the lark, and kept her songs his own small head within.
And while he gathered worms for tea, or bugs for breakfast store,
He sang the songs o'er in his heart, and thought them o'er and o'er.
But one bright day the lark fell ill; when past her cozy nest
A robin flew. He'd wandered far; ripe cherries were his quest,
And in his beak he held a twig, with red fruit covered o'er.
'Twas then the lark called out to him, "O friend, I thee implore
"Give me thy fruit, my throat is dry, I'll give to thee my slave
For your rich bite—for I am ill—perhaps my life 'twill save."
Then "Cheer-up, Cheer-up!" said robin bold, "the cherries are your own,
While I've your faithful slave, I'm sure I'll not my fruit bemoan."
The plain gray bird worked long and well, this master to obey;
He gathered grubs, fetched many sticks, and toiled the livelong day.
But robin's song, "Cheer-up Cheer-up," so eased his mind of care
That work seemed light; he learned the song, and never knew despair.
Though hard his lot, with heart of song he felt his burden light,
His head was full of melody that cheered him day and night.
So faithful he, so sweet and kind, so true to duties plain,
That he was sold to jay-bird, then to the wren again.
The cuckoo bought him, then the crow, first one and then another;
He worked for each new master, till sold unto a brother.
While as he worked, he kept his heart free from the sin of pride,
And went on learning, till his head held all that it could hide.
And so one day kind Providence, though seeming most unkind—
Took things in hand, when sparrow-hawk his work to him resigned.
He did his best, though sparrow-hawk was very hard to please;
He beat him, and he pecked his head, in every way to tease.
Until at last he thought him dead, and left him there forlorn,
Not knowing that his cruel act the slave's life would adorn.
With feeble cry the weak, gray bird, his bruises to endure,
Crept to a stream to quench his thirst with water cold and pure.
And as it trickled down his throat, his ever grateful heart
To his Creator rose, to give the thanks it would impart.
When lo! a burst of melody surprised his wondering ear;
'Twas such a song as none on earth before that day could hear.
And then it was revealed to him he held the gift of song;
Old sparrow-hawk had loosed his tongue, nor could he e'er belong
To any bird, for he could sing. Oh happy was the day
That all the woodland echoed back that first sweet roundelay!
But when the birds, sparrow and all, his worth did realize,
Each wished to have him for his own, all coveted the prize;
While sparrow-hawk cried "He is mine and I will have my own!"
The owl arose with dignity, his mandate to make known.
"My friends of feathers, may I state as I have done before
That one who sings belongs to none, he is a slave no more.
One who surpasses all his kind in patience, heart and skill,
Should be our king instead of slave, and we should do his will.
Henceforth to show our deep respect and love, all in a word,
We'll hold our tongues whene'er we hear the voice of mocking bird."—*Edith Drury Lemington.*

American Bald Eagle

Length: 30 to 36 inches; attains a wing-spread of 6 feet.
Color: Dark brown. After the third year the head, neck and tail are pure white. The feet are bright yellow, and are not feathered, as the golden eagle.
Range: North America, east of the Mississippi near the Great Lakes and larger rivers, and the Atlantic coast.
Migrations: Not migratory.

There are two species of eagles in America. The golden or mountain eagle is found west of the Mississippi. Its head is reddish, and the legs are feathered to the toes. It is one of the nine known species of true eagles.

The bald eagle is a member of the family of Ernes, or sea-eagles. It is nearly as big as the golden eagle but is not feathered to the toes, and its head, neck and tail, after the third year, are perfectly white. It was originally numerous all over this country, and still survives near the coast, around the Great Lakes, and near the large rivers, east of the Mississippi. Its habitat is determined by its diet, which is mainly fish. This is for the most part picked up dead or dying from the surface of the water. Bald eagles have always abounded near Niagara Falls, due to the number of fish found there, killed in the falls or the whirlpool below. The bald eagle will also attack the fish-hawk, and compel him to drop what he has caught. When fish are not obtainable they eat carrion, or kill small birds and mammals.

They are not migratory, except from the ice-bound north. They build a nest of sticks in an elevated position, and this nest, repaired from season to season, is occupied by the same pair of birds for years. They lay usually two eggs, and the generations of young live in the same neighborhood as the parent birds.

This eagle was chosen June 20, 1782 as the emblem of our country, because of its long life, great strength and majestic looks, and also because it was then believed to exist on this continent only.

Old Abe

Many years ago, a white-headed eagle was taken from its nest when only four months old, and sold to a Wisconsin farmer for a bushel of corn. The bird was very intelligent, and attracted the attention of a gentleman, who purchased and presented him to the Eighth Regiment of Wisconsin, then preparing to go to the front. The eagle was gladly received, and given a place next to the regimental flag. For three years he followed the "Live Eagle Regiment," being near its flag in thirty battles.

This majestic bird was always moved and most demonstrative at the sound of martial music. He shared all the battles of the regiment, but no drop of his blood was ever sacrificed. Vainly did rebel sharpshooters aim at his dark figure, conspicuously "painted on the crimson sky;" he seemed to bear a charmed life; and his loyal comrades almost looked up to him as their leader. He was named "Old Abe," sworn into service, and proved to be every inch a soldier, listening to and obeying orders, noting the time most accurately, always after the first year giving heed to "attention," insisting upon being in the thickest of the fight and when his comrades, exposed to great danger from the terrible fire of the enemy, were ordered to lie down, he would flatten himself upon the ground with them, rising when they did, and with outspread pinions soar aloft over the carnage and smoke of the battle. When the cannon were pouring forth destruction and death, above the roar and thunder of the artillery rose his wild, shrill, battle-cry of freedom. He was always restless before the march to the encounter, but after the smoke of the battle field had cleared away he would doff his soldier-like bearing, and with wild screams of delight would manifest his joy at victory; but if defeat was the result his discomfiture and deep sorrow were manifested by every movement of his stately but drooping figure.—*Adapted from M. S. Porter.*

The Old Eagle Tree

In a remote field stood a large tulip tree apparently of a century's growth, and one of the most gigantic of that splendid species. It looked like the father of the surrounding forest. A single tree of huge dimensions, standing all alone, is a sublime object.

On top of this tree an old eagle, commonly called the "Fishing Eagle," had built her nest every year for many years, and unmolested raised her young. What is remarkable, as she procured her food from the ocean, this tree stood fully ten miles from the seashore. It had long been known as the "Old Eagle Tree."

On a warm sunny day the workmen were hoeing corn in an adjoining field. At a certain hour of the day the old eagle was known to set off for the seaside, to gather food for her young. As she this day returned with a large fish in her claws, the workmen surrounded the tree, and by yelling and hooting and throwing stones so scared the poor bird that she dropped her fish, and they carried it off in triumph.

The men soon dispersed; but Joseph sat down under a bush nearby to watch, and to bestow unavailing pity. The bird soon returned to her nest without food. The eaglets at once set up a cry for food so shrill, so clear and so clamorous that the boy was greatly moved.

The parent bird seemed to try to soothe them; but their appetites were too keen, and it was all in vain. She then perched herself on a limb near them, and looked down into the nest with a look that seemed to say, "I do not know what to do next."

Her indecision was but momentary; again she poised herself, uttered one or two sharp notes, as if telling them to "lie still," balanced her body, spread her wings, and was away again for the sea!

Joseph was determined to see the result. His eye followed her till she grew small, smaller, a mere speck in the sky, and then disappeared.

She was gone nearly two hours, about double her usual time for a voyage, when she again returned on a slow, weary wing, flying uncommonly low in order to have a heavier atmosphere to sustain her, with another fish in her talons.

On nearing the field she made a circuit around it, to see if her enemies were again there. Finding the coast clear, she once more reached her tree, drooping, faint and weary, and evidently nearly exhausted. Again the eaglets set up their cry, which was soon hushed by the distribution of the dinner.

The American Eagle

Bird of Columbia! well art thou
  An emblem of our native land;
With unblenched front and noble brow,
  Among the nations doomed to stand;
Proud, like her mighty mountain woods;
  Like her own rivers wandering free;
And sending forth from hills and floods
  The joyous shout of liberty!

Like thee, majestic bird! like thee,
She stands in unbought majesty,
With spreading wing, untired and strong,
That dares a soaring far and long,
That mounts aloft, nor looks below,
And will not quail, though tempests blow.

The admiration of the earth,
In grand simplicity she stands;
Like thee, the storms beheld her birth,
And she was nursed by rugged hands;
But, past the fierce and furious war,
Her rising fame new glory brings,
For kings and nobles come from far
To seek the shelter of her wings.
And like thee, rider of the cloud,
She mounts the heavens, serene and proud,
Great in her pure and noble fame,
Great in her spotless champion's name,
And destined in her day to be
Mighty as Rome, more nobly free.

—*C. W. Thompson.*

The Eagle of Freedom

O, that Eagle of Freedom! when cloud upon cloud
Swathed the sky of my own native land with a shroud,
When lightnings gleamed fiercely, and thunderbolts rung,
How proud to the tempest those pinions were flung!
Though the wild blast of battle rushed fierce through the air
With darkness and dread, still the eagle was there;
Unquailing, still speeding, his swift flight was on,
Till rainbow of peace crowned the victory won.

O, that Eagle of Freedom! age dims not his eye,
He has seen earth's mortality spring, bloom, and die!
He has seen the strong nations rise, flourish, and fall,
He mocks at Time's changes, he triumphs o'er all;
He has seen our own land with forests o'erspread,
He sees it with sunshine and joy on its head;
And his presence will bless this his own chosen clime,
Till the Archangel's fiat is set upon time.

—*Alfred B. Street.*

The Eagle, Our National Emblem

On the backs of our gold coins, the silver dollar, the half dollar and the quarter, we see an eagle with outspread wings.

On the Great Seal of the United States and in many places which are exponents of our nation's authority we see the same emblem.

The eagle represents freedom. Living as he does on the tops of lofty mountains, amid the solitary grandeur of Nature, he has unlimited freedom, whether with strong pinions he sweeps into the valleys below, or upward into the boundless spaces beyond.

It is said the eagle was used as a national emblem because at one of the first battles of the Revolution (which occurred early in the morning) the noise of the struggle awoke the sleeping eagles on the heights and they flew from their nests and circled about over the heads of the fighting men, all the while giving vent to their raucous cries. "They are shrieking for Freedom," said the patriots.

Thus the eagle, full of the boundless spirit of freedom, living above the valleys, strong and powerful in his might, has become the national emblem of a country that offers freedom in word and thought and an opportunity for a full and free expansion into the boundless space of the future.
—*Maude M. Grant.*

The Eagle

Bird of the broad and sweeping wing
Thy home is high in heaven,
Where wide the storms their banners fling,
And the tempest clouds are driven.
Thy throne is on the mountain top;
Thy fields—the boundless air;
And hoary peaks that proudly prop
The skies, thy dwellings are.

And where was then thy fearless flight?
"O'er the dark, mysterious sea,
To lands that caught the setting light,
The cradle of liberty.
There on the silent and lonely shore,
For ages I watched alone,
And the world, in its darkness, asked no more
Where the glorious bird had flown.

"But then came a bold and hardy few,
And they breasted the unknown wave;
I caught afar the wandering crew,
And I knew they were high and brave.
I wheeled around the welcome bark,
As it sought the desolate shore;
And up to heaven, like a joyous lark,
My quivering pinions bore.

"And now that bold and hardy few
Are a nation wide and strong;
And danger and doubt I have led them through,
And they worship me in song;
And over their bright and glancing arms
On field, and lake, and sea,
With an eye that fires, and a spell that charms,
I guide them to victory."

—*James Gates Percival.*

The Eagle

He clasps the crag with crooked hands;
Close to the sun in lonely lands,
Ring'd with the azure world, he stands.

The wrinkled sea beneath him crawls;
He watches from his mountain walls,
And like a thunderbolt he falls.

—*Alfred Tennyson.*

The Eagle became the National emblem in 1782 when the Great Seal of the United States was adopted. This Great Seal shows a wide-spread eagle, faced front, having on his breast a shield with thirteen perpendicular red and white stripes, surmounted by a blue field with the same number of stars. In his right talon the eagle holds an olive branch, in his left a bundle of thirteen arrows, and in his beak he carries a scroll inscribed with the motto: "E Pluribus Unum." The Eagle appears in the Seals of many of our States, on most of our gold and silver coinage, and is used a great deal for decorative patriotic purposes.

BIRD WAYS

—'Tis always morning
somewhere, and above
The awakening continents
from shore to shore,
Somewhere the birds are
singing evermore.

—*"The Birds of Killingsworth"—*
Henry Wadsworth Longfellow

By ESTHER M. BJOLAND, Editor of Foundation Classroom Materials

Schools and Work in Birdland

NATURE IS the teacher of all the birds. Although her schools are in session every day in the year, the kindergarten classes usually start in July. Every nest with fledglings in it is a kindergarten and every parent is a kindergarten teacher. The first and most important lesson that all birds learn is: "If any will not work, neither shall he eat."

Have you ever seen a father or mother bird hop up on the edge of the nest with a nice worm, poke it down a baby bird's throat, then take it away again and poke it down another throat? If you have, then you were seeing a lesson in self-control. Little birds must learn to know when they have had enough food. When you see a parent peering intently into the throat of a fledgling that has just been fed, the older bird is really watching to see if the youngster is swallowing its food.

Some little birds are taught to catch bugs and worms dropped from the mother's mouth, while others learn to tear food to pieces with their sharp beaks. Some must practice and practice to get their warbling notes just right, and others are content to screech, "Caw, caw." Of course, all birds get flying lessons, but some are taught to glide, others to soar, and still others to rise quickly and fly very rapidly for short distances. Why is there this difference in lessons? Birds live in communities, and so their lessons must fit them to live in their particular surroundings.

After the feeding and flying lessons are over, the parent birds usually send their children out to see the world for themselves. If the young birds are a bit afraid to do this, they are chased away by their elders. Once out in the world, the birds go right to work, for Nature seems to have given to them the task of keeping the insect world in hand. Their working day averages sixteen hours, with no Sundays or holidays off. It is no wonder that school lasts from daybreak to sunset. However, Nature never sends her workers out without proper tools! The birds are fitted with feet, beaks, bodies and wings.

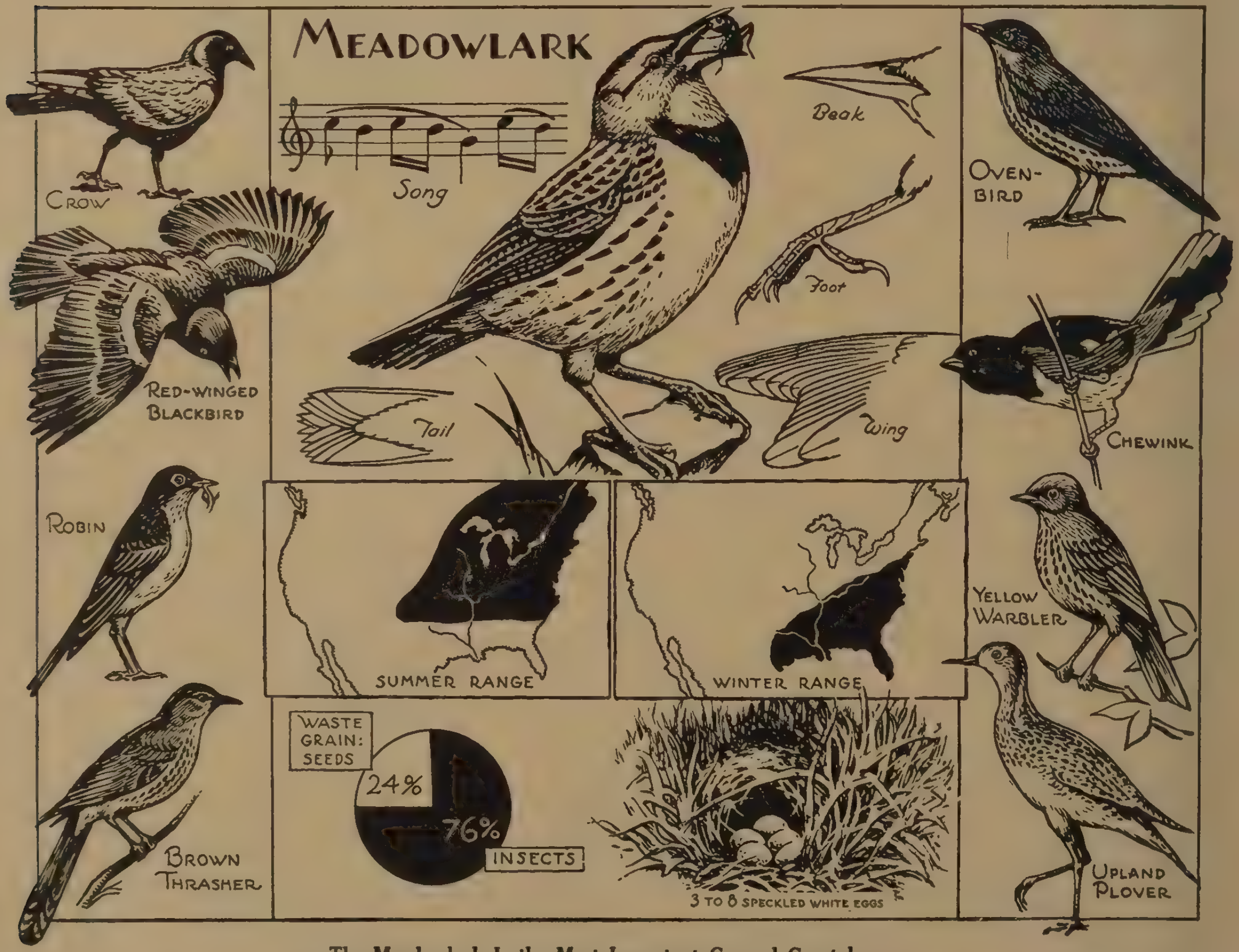
We find that Nature has divided the birds, according to their training, into Ground Caretakers, Weed Destroyers, Bark Cleaners, Foliage Caretakers, Sweepers of the Skies, the Health Department, and Policemen of the Granaries. The next pages give you pictures and stories of their tools and their special jobs.

GROUND CARETAKERS

The ground swarms with insect enemies. Among them are white grubs, June bugs, wireworms, crane flies, cutworms, crown borers, grasshoppers, plant lice, chinch bugs, locusts and army worms. These insects destroy millions of dollars' worth of crops every year. So the very next time you see a robin picking cherries from a tree, remember that this feast is just a bit of candy he has earned as a reward for eating beetles, caterpillars, cutworms, wireworms and the like. First in the ranks of the ground caretakers is the meadowlark. In every region where the ground remains bare and snowless throughout the winter, the whistle of this bird is heard all through the year. In snowy regions the meadowlark migrates, leaving in late autumn and returning in March. It is larger than the American robin, and has a coat of mottled brown and tan, a yellow and white undertail, a rich chocolate marking on its throat, and long legs and bill. Its flight is short and heavy. Four or five white eggs flecked with brown and rose are laid in May in a ground nest of grasses. The nest is often arched with the same material to safeguard the young birds.

Among the other valued members of the ground caretakers' division are blackbirds, crows, robins, native sparrows, chewinks, catbirds, brown thrashers, ground warblers, woodcocks, plovers and flickers. All possess large, straight, simple bills which are excellent for picking up food. Many of the birds walk as they feed on the ground. Have you ever noticed how the robin stands quietly for a moment, then runs forward and turns the head to look more closely? Then if he does not seize an earthworm, he will repeat his actions of standing, looking and running. Birds which eat hidden food must use the active method.

The wings of these birds are used to carry them from one hunting ground to another, but they do not serve them directly in feeding. The wings were built for short and speedy flights.



The Meadowlark Is the Most Important Ground Caretaker

One has to be close to a meadowlark, or be able to observe it in the full sunlight, in order to see its colors. Strange as it may seem, the brilliant yellow of the breast is completely absorbed by the greens and browns of the grasses.

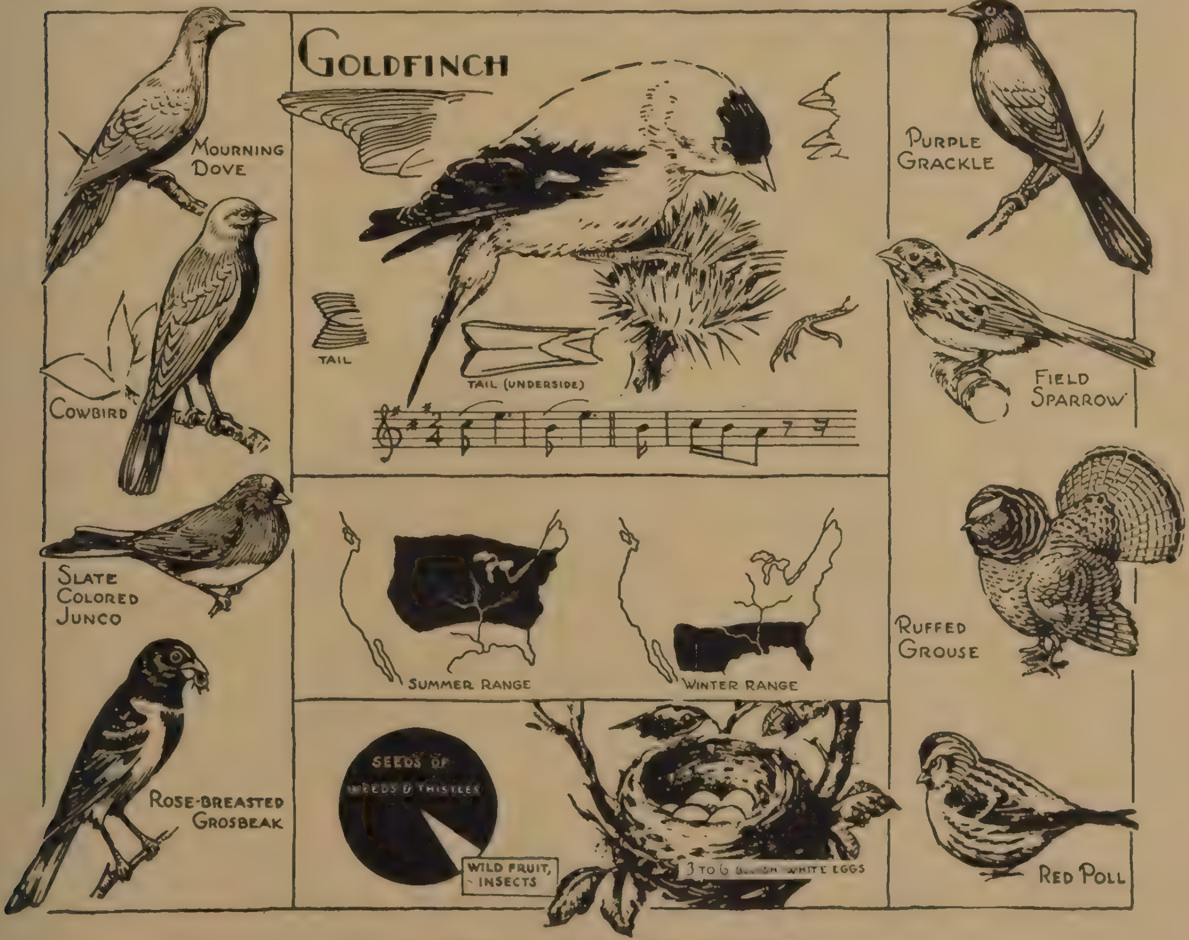
WEED DESTROYERS

Weeds and their seeds are a nuisance to the farmer and the gardener alike. Every autumn these seeds take off in parachutes, gliders and airplanes. Some tumble along and some steal rides, but no matter how the seeds travel, the farmer and the gardener would be in a sorry plight if it were not for the weed destroyers. The eaters of weed seeds include the sparrows, the finches and, in the winter, juncos, snowflakes, longspurs, grosbeaks, redpolls and siskins, who come south when their summer feeding grounds are buried under deep snows. We also must add to the foregoing list the bobwhite, horned lark, blackbird, cowbird, grackle, chewink, meadowlark, bobolink, ruffed grouse and mourning dove.

The bills of most of these birds are short, straight, heavy and concave. They are used to crack seeds, even the large ones; the birds also use their bills to secure insects and to eat fruit.

The goldfinch, sometimes called the American canary and also widely known as the thistlebird, is a champion weed destroyer. In roving flocks of twenty or more, these pretty little fellows in lemon yellow and black, with their smaller mates in olive brown, flit about field, garden and woodland everywhere, in search of light and downy seeds. Dandelions on the lawn, bachelor buttons in the garden, thistles in the open country, seem to be their choice. They come early, but usually nest in July. They choose a crotch in an orchard or shade tree, caring very little whether that crotch occupies a high or a low place. Within the crotch a neat, deep, cup-shaped nest is built of fine grasses and lined with thistledown.

In so large a group of birds as the weed destroyers there is bound to be a big variation in types of nests and in nest sites. The nests may be elaborately woven and felted, as are those of the goldfinches; or they may be a scant pile of sticks without lining, so poorly built that one may see the eggs by looking at the nest from beneath.



The Goldfinch Is a Champion Weed Destroyer

Just before the mating season, the goldfinches hold their annual song fests. They come in flocks to sing and dine. While singing, the birds remove the green germs of the elm flakes and tear out the closed buds of the dandelions.

BARK CLEANERS

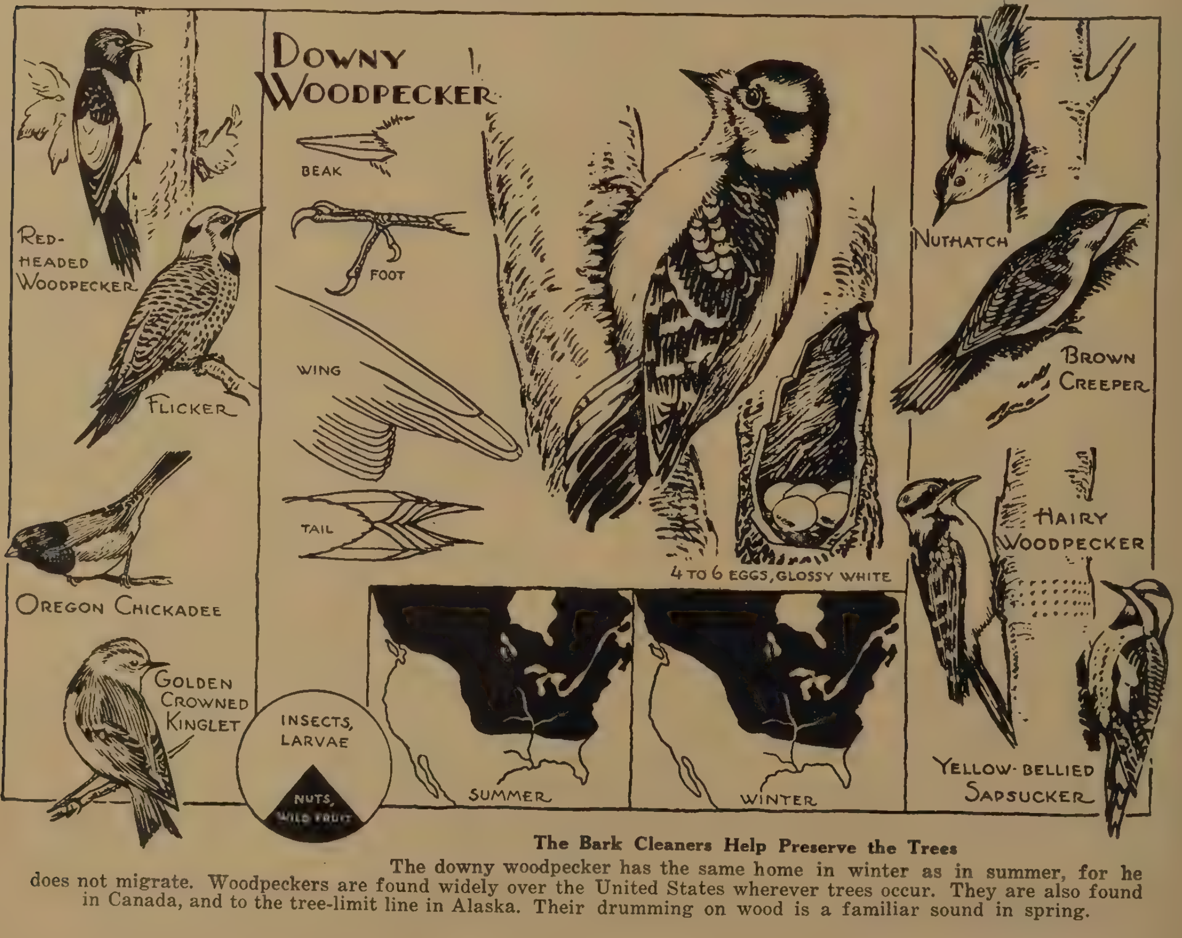
Many crawling insects infest the bark of the trunk and limbs of trees. Under the natural scales or in holes which they have bored into the bark, the insects lay their eggs. The eggs hatch into larvae. After a "snug-as-a-bug-in-rug" winter, the larvae become insects if the bark cleaners do not get them. Who are the bark cleaners? They are the woodpeckers, the chickadees, brown creepers, nuthatches, sapsuckers, kinglets, bush tits and titmice. Have you ever watched a woodpecker at work on a tree? Of course you have; but perhaps you did not know that he was eating a hundred insect eggs in a minute, emptying in a second or two a burrow filled with grubs. Nothing escapes him, as he works his way around the trunk, listening for every stirring of a borer beneath the bark, or tapping a suspected point. His tools are most excellent. His bill is a chisel and mallet, and his long, barbed tongue is an effective spear. His neck and shoulders are very strong.

The woodpecker's feet are peculiarly adapted for climbing, having two of the four toes turned forward and two backward. His tail feathers serve as props as he climbs the tree trunk. The tireless bark cleaners of the trees get insects which are inaccessible to all other birds. Like the Royal Mounted Police, they always get their man.

The chickadees and the nuthatches also have insect-gleaning bills. However, the nuthatches scan the trunks of trees and the larger leaves, and the outer twigs and the leaves are left to the chickadees and bush tits. The nuthatches have surprisingly short tails, but very long feet. Their feet permit them to take any position on the limb or tree trunk: right-side up, upside down, on top of the limb or underneath the limb. They, too, have a perching type of foot, but they do not use their tails as props as do the woodpeckers.

The downy woodpecker spends his life going up and down on the trunks and large limbs of trees. Right-side up or upside down, it matters not at all to him in his ceaseless search for worm eggs, larvae and grubs. With his bill he taps and bores a little hole into the bark. With his long tongue he spears his victims.

His love song is a drumming on wood with his bill. He chooses a mate in May, and together the two cut a hole into a dead limb and hollow out a nesting place, lining it with soft materials.



The Bark Cleaners Help Preserve the Trees

The downy woodpecker has the same home in winter as in summer, for he does not migrate. Woodpeckers are found widely over the United States wherever trees occur. They are also found in Canada, and to the tree-limit line in Alaska. Their drumming on wood is a familiar sound in spring.

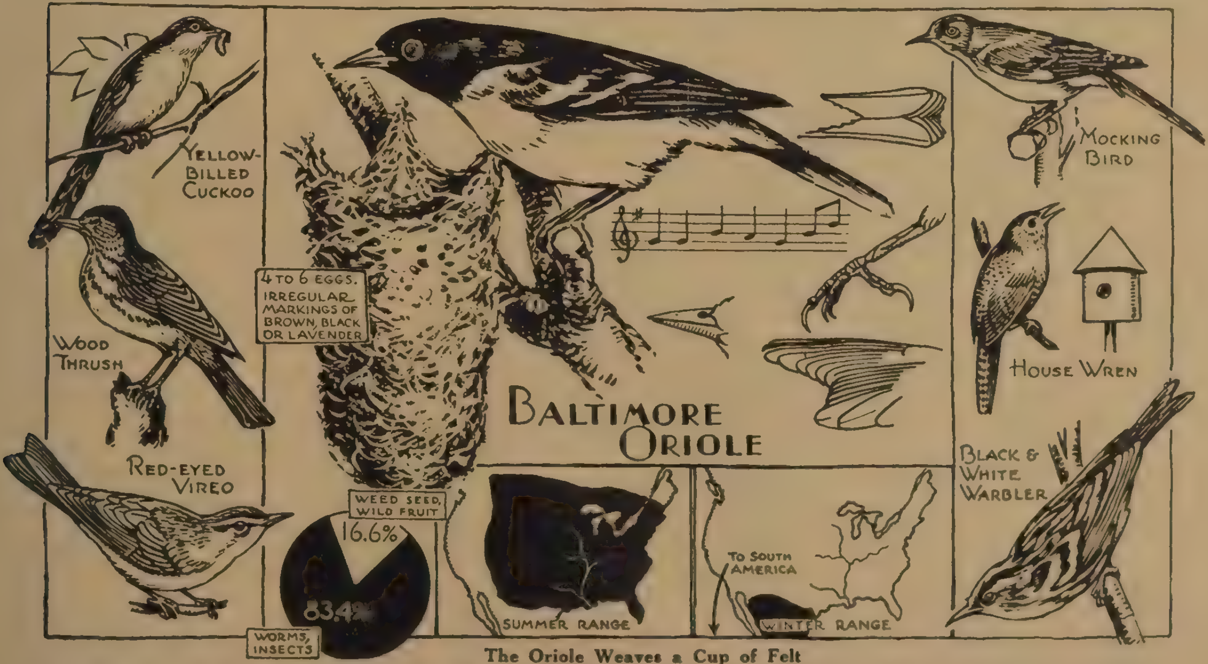
FOLIAGE CARETAKERS

The young, tender growth of leaves at the ends of twigs and on outer branches is especially attractive to many insects, for from them they obtain tender food for their hungry larvae. Naturally, that is the very place the insects deposit many eggs. To the great clans of warblers and vireos Nature has assigned the job of warring upon the countless billions of plant lice, ants, smaller caterpillars, cankerworms, leaf hoppers and flies, and the eggs and larvae of them all. The warblers are nervous workers. They dart here, there and everywhere among the foliage, but the vireos or greenlets take their time, and so are more thorough in their search. Cocking their heads to one side, they survey the under surfaces of twigs and leaves and there find an abundant meal after the warblers have made a hasty luncheon covering the same growth.

However, there are many larger pests that infest these same parts of the trees. With these the warblers and vireos are unable to cope; so to their assistance comes another great army of feathered workers. Many of our sweetest songsters and our most beautiful birds are numbered in this group. Well hidden among the foliage of trees and shrubbery, ever alert for the larger insects and worms, are found robins, bluebirds, thrushes, mocking birds, catbirds, orioles, thrashers, wrens, tanagers and many others. They keep up a persistent search for their insect fare. The cuckoo is delighted to clean up a nest of tent caterpillars. Most birds shun the hairy caterpillar, but not the cuckoo. Its stomach has been found to be lined with caterpillar hair as if it were lined with plush. Gypsy moths and webworms are greatly relished by the yellow-billed cuckoo. The stomach of one was found to contain over two hundred fall webworms. The Baltimore oriole is also very fond of caterpillars. The bird gets about eighty-three per cent of its food from among the leaves on the trees. No bird is more diligently the friend of the farmer than this oriole.

The Baltimore oriole is probably the most beautiful of the foliage cleaners. You may see his flashing coat of brightest orange and black flitting among the blossoms whenever the cherry and apple trees are in bloom. At that time you may hear his proud piping voice, which seems to cry out: "Oh, I'm a pretty bird, I'm a pretty, pretty bird." He darts his bill into every flower and gleans worms and eggs and tree lice from the twigs and buds. Later, he devours and feeds his nestlings great quantities of soft-bodied caterpillars, cankerworms, etc.

The olive-green female birds arrive soon after the coming of the males. Shortly thereafter, nesting begins. It is not uncommon to see the last year's nest hanging gray and useless beside a newly built one. After a time, six eggs, dull white and blotched with brown, are laid deep within the nest. Then, in June, come the cries of the new baby oriole. In August the orioles, old and young, are off to Central America for the cold months.



The Oriole Weaves a Cup of Felt

Its nest is made from strings, yarn and milkweed fiber. This material is gathered, hackled and woven into a waterproof home. Using its mouth for a needle, the bird stitches the sides and hems the mouth of the nest with horsehair.

SWEEPERS OF THE SKIES

A most interesting class of workers consists of the birds that dart and soar about the skies or sweep low over the fields, shallow pools and marshes in endless search for the gnats, mosquitoes, midges and other gauzy-winged pests that infest the air. Chief in this group are the many species of swallows, the chimney swift and the whippoorwill and nighthawk. Their incessant flight makes one wonder when they eat. The answer is found in the fact that these birds fly with open mouths. A sticky saliva holds the insects captive. When a small ball of them has been collected, it is swallowed or taken to the nestful of fledglings. All these birds have weak feet. Why?

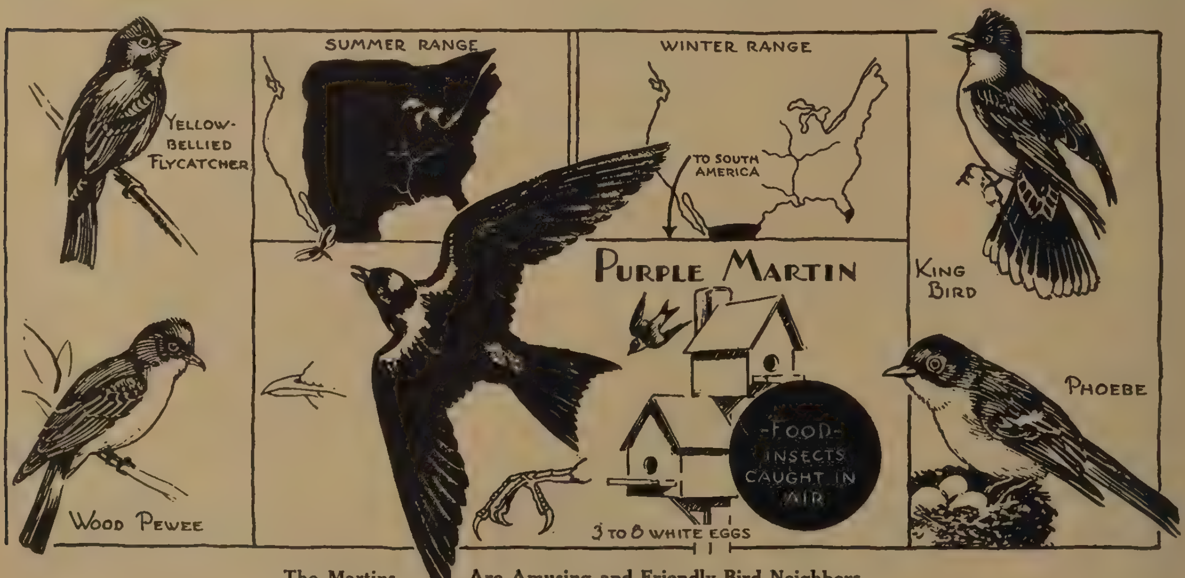
A second group of sky-sweepers perch upon upper branches, preferably dead and extended, and on posts, gables and other points open to view, to sally forth into the air at the very instant an insect attempts a flight. A click of a determined beak ends that flight, and the kingbird, pewee, flycatcher or phoebe returns at once to his perch to watch for his next catch.

At dusk, early in July, a bird lover sat motionless in an automobile to observe a pair of kingbirds whose nest was in a chokecherry tree. The parents took up their watch on a dead limb in the top of the tree. Their nestlings were secure in a nest some ten feet below. Over the near-by field of soybeans, moths began to rise. Quick as lightning the birds swooped down. Unerringly they came on swift wing. There was a helpless flutter of moth wings, white, brown or black, but the moth never escaped that sure bill. Then, as swiftly, the kingbird wheeled and flew straight to the nest, then instantly up to the lofty perch again. In a period of exactly thirty minutes, those two birds caught ninety-three moths.

The kingbird, often known as the bee bird, was for ages condemned as a menace to the beekeeper. Honest investigation has proved that he is a friend, not an enemy. He eats very few bees and those mostly drones, but he haunts the apiaries to consume great numbers of robber flies or bee killers. These insects are the beekeepers' worst enemy. Ninety per cent of the kingbirds' food is made up of robber flies, rose chafers, clover weevils, horse flies, orchard beetles, bean moths, melon beetles, grasshoppers and other injurious insects.

For friendliness, for interesting and amusing ways, for usefulness to man, no bird excels the purple martin, one of the best known of the swallow family. His crisp, gurgling, chuckling call announces his arrival in April. Sleek purple males come, look over the housing situation, and depart. A week or ten days later, the martin house is covered with excited pairs intent on getting an apartment. Great battles take place in the effort to drive away the English sparrows. Once housekeeping is set up, with leaves and grasses spread rather loosely on the floor of the compartment, three to eight white eggs are laid.

The graceful soaring of the birds as they feed, flying open-mouthed through the air to catch myriads of winged insects, may be observed in the morning and evening. They collect balls of mosquitoes, gnats, etc., and feed them to their young.



The Martins Are Amusing and Friendly Bird Neighbors

Before man built houses for the martins they built their homes in holes in trees and stumps. They much prefer a house, for it permits them to attend to their sky-sweeping with no fear that their homes will be robbed by weasels, snakes or squirrels.

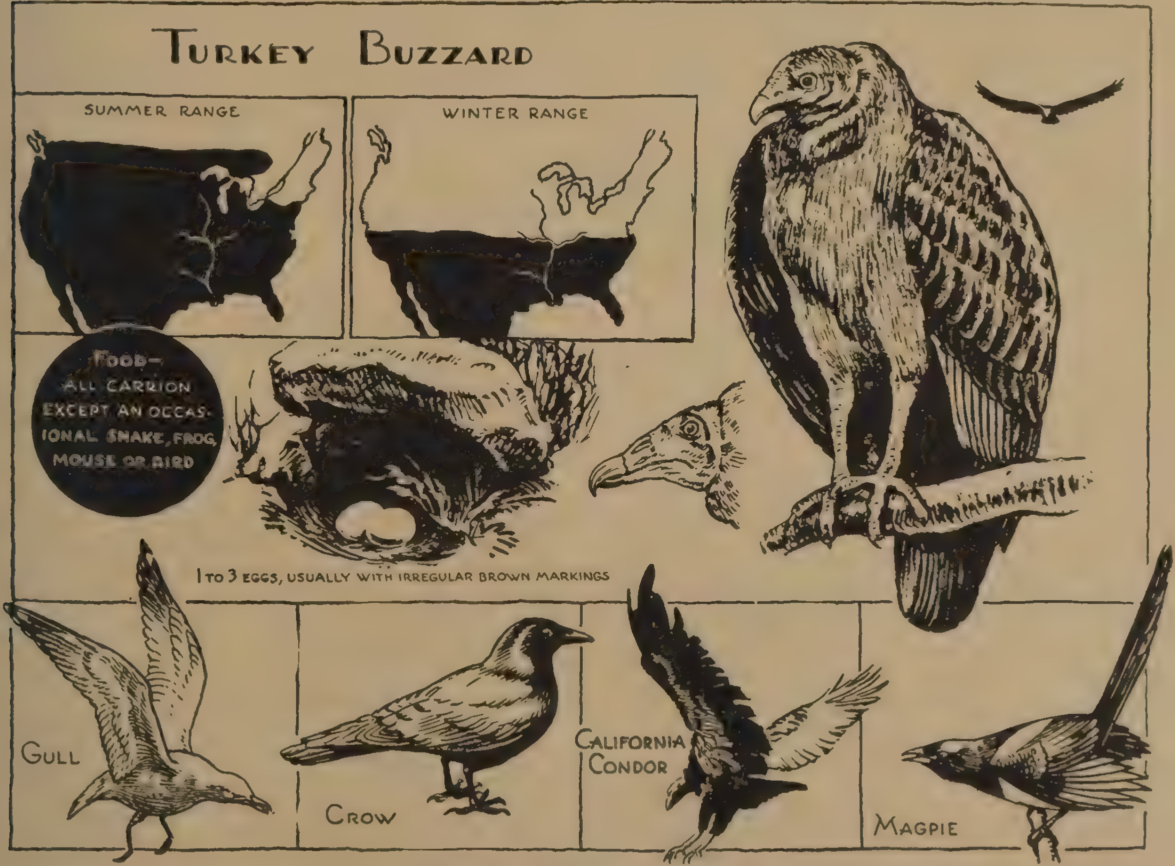
THE HEALTH DEPARTMENT OF THE BIRDS

Have you ever watched the graceful soaring of a vulture? Doesn't he seem to be on almost motionless wing as he wheels about the southern skies? King of gliders is he, but with his cousin, the turkey buzzard, he has a most ordinary and uninteresting job to perform. His task is to rid the earth's surface of the dead bodies of animals. In Cuba and its neighboring islands the natives rarely take the trouble to bury an animal, even one so large as a horse or mule. They know the vultures and buzzards will quickly remove every scrap of flesh from its bones. Although these people are exceedingly destructive of the robin, bobolink, woodpecker and other valuable birds, and do not care to learn anything about them, they are careful to give their scavengers legal protection.

The turkey buzzard is the most common of the several species of vultures. It has a bright-red head and neck, and its feathers are glossy black edged with white. It is thirty inches long and has a wingspread of nearly six feet. The bird ranges from Canada to Mexico. Man has given this valued servant full protection of the law.

Many birds keep busy cleaning up the beaches. The gulls are our best servants in this respect. Haven't you noticed that flocks of gulls are ever present when the garbage scows pull out to sea or into the Great Lakes? They follow ships all the way across the Atlantic. So swift is their flight that, after resting "asleep on the deep" all night, they can overtake their ship in time for the scraps thrown out after breakfast.

The crow's character has been painted in colors as black as his coat. Farmers do not like the sight of him and his numerous relatives in the cornfields. This dislike does not bother the crow. Indeed, he no longer pays much attention to the dejected-looking scarecrows that are meant to chase him far, far away from a cornfield. Of late there has been a change of feeling, for naturalists have discovered that the crows have rid cornfields of cutworms and other pests that eat grains.



Members of the Health Department

Strange as it may seem, the scavenger group of bird workers includes the smartest birds. The crow is the drollest, most intelligent and most individual of birds in his walk, actions and chatter. The magpie can learn to imitate many human sounds. It is a sly, mischievous bird, and in addition to eating food of all kinds, it likes to rob the nests of smaller birds.

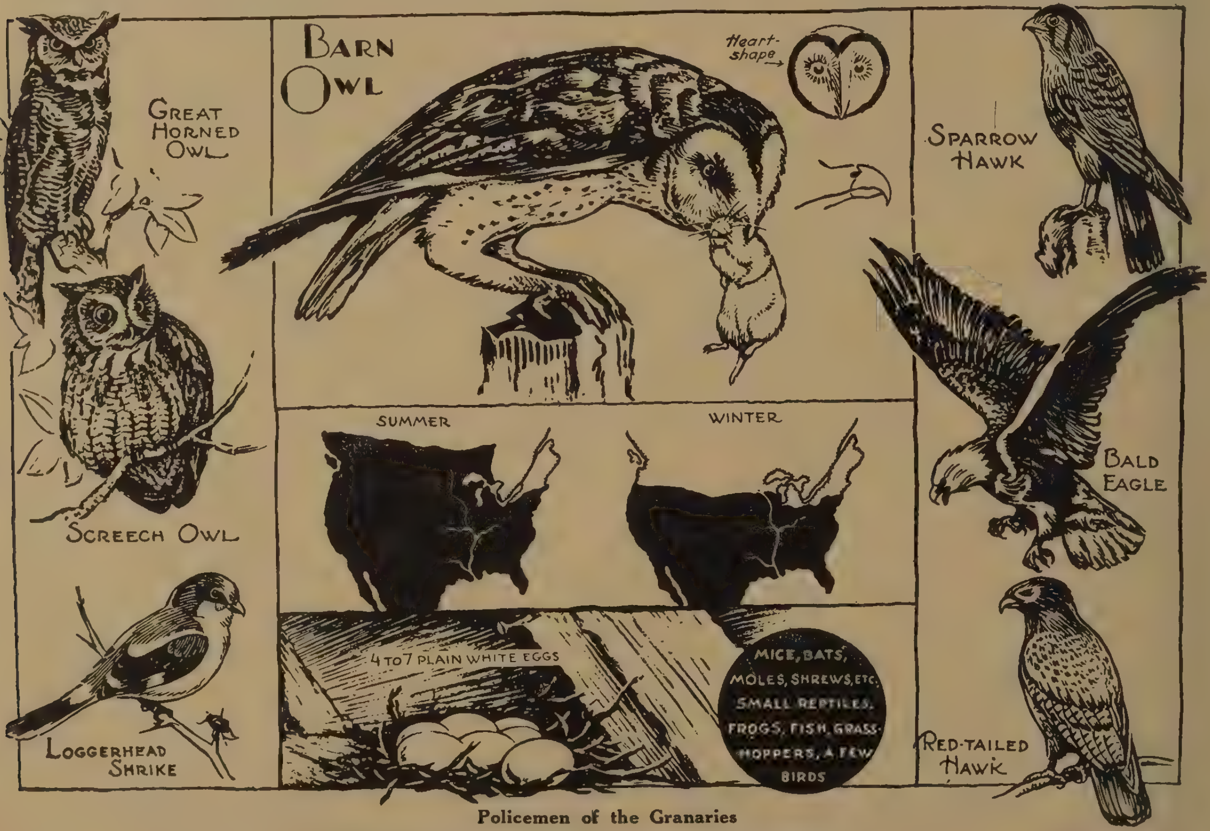
POLICEMEN OF THE GRANARIES—A VALUED GROUP

Owls, eagles, hawks and various other feathered flesh-eaters are called birds of prey because their chief diet consists of other birds and animals, such as wild ducks, chickens, song birds, mice and rabbits. They have tearing bills with which they tear their victims to pieces, and grasping feet which serve to seize and to kill the prey. The flesh-eaters are vigorous flyers. They pursue and seize their weak prey on land, water or in the air, often carrying it away to hidden eyries for their young.

Formerly, to many people the fact that a bird was a creature of prey was reason for condemning it without any further investigation. One cannot always believe just what his eyes see, however. Dr. A. K. Fisher, while in the service of the Federal Government, made an exhaustive study of the birds of prey, including the forty-odd species found in America. He found some good in all. He condemned only four. His "highwaymen" among the hawks include: (1) the duck hawk, because it destroys wild ducks; (2) the goshawk, because it preys upon poultry, grouse and rabbits; (3) Cooper's hawk, because it is a chicken thief and is found in large numbers; (4) the sharp-skinned hawk, since it destroys chickens and song birds.

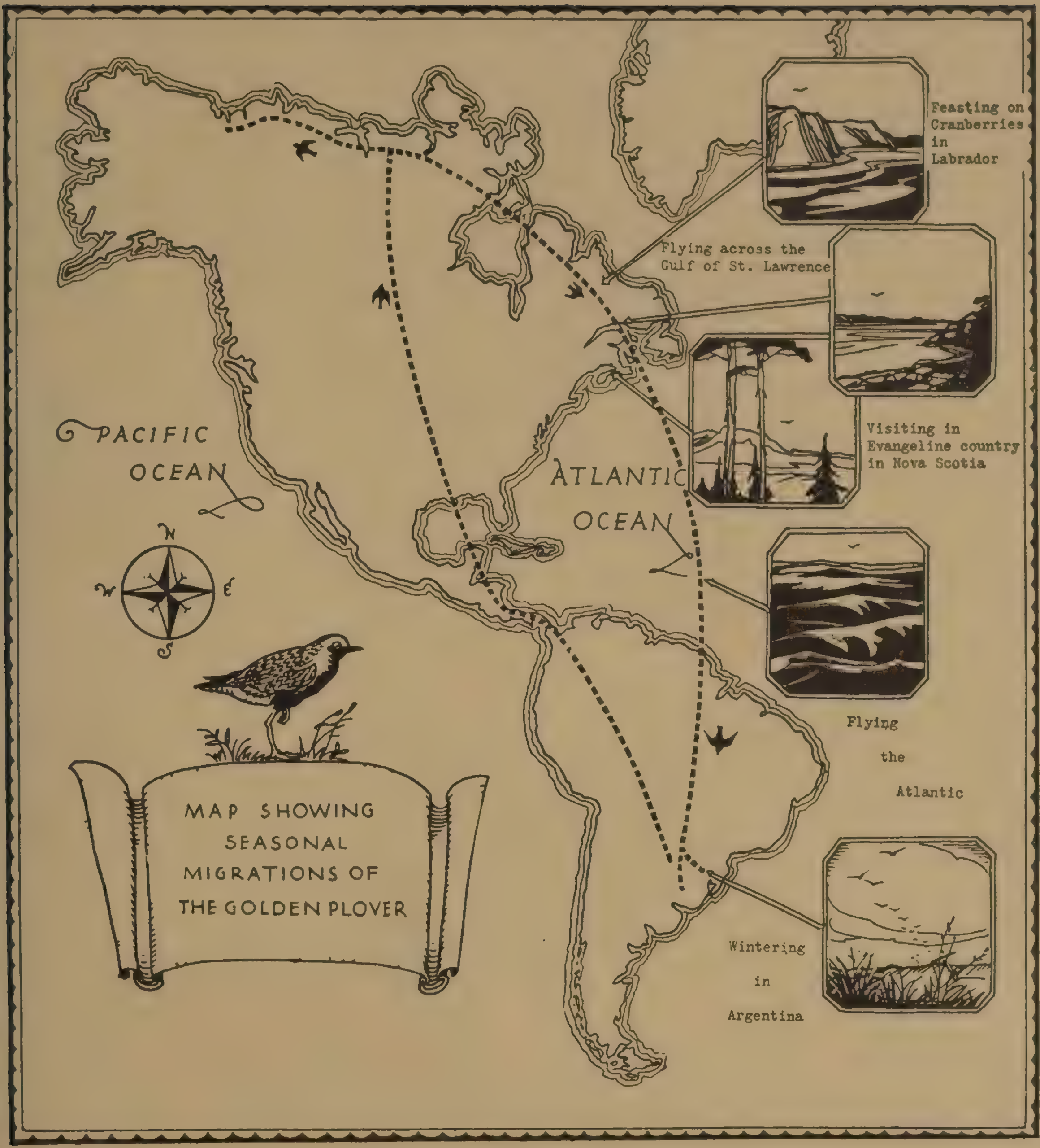
For the occasional misdeeds of these four birds of prey, man condemned all their race. He placed generous bounties on their capture. Everyone that could took a shot at them until the owls and hawks were almost exterminated. Then, before their very eyes, these bird hunters saw an advance of insect pests and of vast hordes of mice and other small rodents which consumed millions of dollars in grain. The bounty law was repealed, for the farmer had learned to his sorrow the worth of the policemen of his granaries. He learned that few tiny thieves in fur about the grainfields and barns escape, once the eyes of hawk or owl espy them.

The little screech owl, the barn owl and the gray barn owl are all invaluable as destroyers of insects, mice, shrews and moles. The most striking feature of an owl is its eyes. These are large and set to face forward, so that, in order to see, the bird has to turn its head to the side. The owl's feathers are especially fine and soft, enabling it to fly silently and surprise its prey. Owls usually hunt after dark. They choose holes in trees, belfry towers, old buildings, barn lofts and such places for their nests. To kill owls shows great stupidity.



Policemen of the Granaries

Owls are great mousers. A barn owl will catch more mice in a night than will a dozen cats. What a boon to the farmer! The screech owl, one of the smallest species, can be identified by its mournful whistle, heard at night. It preys on insects as well as mice.


Feasting on Cranberries in Labrador
Flying across the Gulf of St. Lawrence
PACIFIC OCEAN
ATLANTIC OCEAN
Visiting in Evangeline country in Nova Scotia
N
W
E
S
Flying the Atlantic
MAP SHOWING SEASONAL MIGRATIONS OF THE GOLDEN PLOVER
Wintering in Argentina

IT SEEMS to be a law among bird travelers that each bird must follow the route over which his parents flew. Otherwise, how is it that young birds, which so frequently precede their parents on a southward journey, succeed in arriving at a region which they never before have seen? This is one of many mysteries.

Perhaps one of the most puzzling flights in bird migrations is that of the golden plover, which nests on the shores of the Arctic Ocean. Its young are hatched in June. In July all the birds of the family fly to the coast of Labrador. From Labrador they cross the Gulf of St. Lawrence to Nova Scotia, the starting point for the over-the-ocean flight to South America. The overland flight in South America ends in Argentina. Their sojourn here is about four times as long as the nesting period in the Arctic region.

Then in the spring, instead of returning north over the autumn route, the golden plover travels from Argentina to the northwestern part of South America. Thence it journeys through Central America or crosses over the Caribbean Sea to the Gulf of Mexico. After crossing the Gulf, the bird migrates up the Mississippi Valley, reaching its Arctic summer home by way of British Columbia.

INDIAN DAYS *and* WAYS

By ESTHER M. BJOLAND, Editor of Foundation Classroom Materials.
Illustrations by HOLLING C. HOLLING. Indian Pictographs by HOTAN-TONKA.

The Southeastern Indians

TO OBTAIN a true picture of the Indian we need to remember that all Indians were no more alike than all white people are alike, and that the environment of the Indians varied in different parts of America. Not all Indians lived in wigwams or tepees, wore feathers in their hair or set up totem poles. Nor did all Indians speak the same language; on the contrary, many Indian languages are as different from one another as English from Japanese. At the bottom of this page and the four following are symbols used by some of the tribes in their picture writing. This sign communication was not a written language but a method used to express Indian thoughts and ideas. When reading the sign story on page 280, you will find there are no signs for connecting words. Can you make up other stories from the symbols?

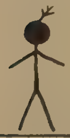
A Seminole Village

The first successful English settlement in America was Jamestown. Of course you have heard the story of Pocahontas and Captain John Smith. Pocahontas, daughter of a leader of the Powhatan Indians of Virginia, lived in a clearing in the forest, beside a river. Her father's home was a good-sized rectangular house with a curved roof. It was made of sheets of bark fastened to a wooden frame. Around it were the other houses of the village, probably surrounded by a palisade of logs set in the ground, to help keep out enemies.

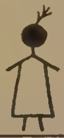
Throughout the country which now forms the southeastern part of the United States, more than twenty tribes of Indians lived in villages much like those of the Powhatans. Each village was a busy place. When the men were not out at war, or hunting to supply their families with food, they were making weapons and tools of stone, deer antlers, bone and wood, shaping dugout canoes, or fashioning ornaments of stone, shell, feathers and sometimes copper, brought from far to the north. Besides working in their gardens, the women of the Southeast made fine baskets and good pottery, prepared food and made clothing.

Probably the most important tribe of the Southeast was the Cherokee. These Indians were quick to adopt many ways of the white people. However, not all tribes of the Southeast managed so well. Those who still tried to live by hunting had a hard time to get enough to eat. Finally, the United States Government ruled that the Southeastern Indians must all move to a region beyond their old location. It was then called Indian Territory but is now part of Oklahoma. There the Indians were given as much land as they lost in their old homes. The five important tribes who had to move were the Cherokees, Chickasaws, Choctaws, Creeks and Seminoles.

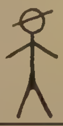
The Seminoles, then living in Florida, refused to be moved. Led by Osceola, they went to war against the whites, starting what is known as the Seminole War. Even after their leader was seized, they continued fighting until 1842, when most of them were captured and sent to Indian Territory.



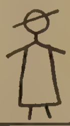
Indian man



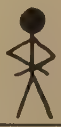
Indian woman



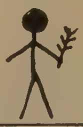
White man



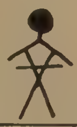
White woman



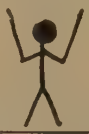
prisoner



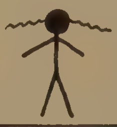
Indian peace sign



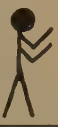
hunger starving



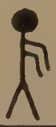
see discover



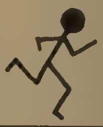
hear listen



give bring



take away not good



run go fast

AN IROQUOIS VILLAGE IN COLONIAL TIMES

People of the Woodlands

When the Pilgrims spent their first winter at Plymouth, they had reason to be thankful to the Indian Massasoit, and to his people, for the food which helped them to keep alive. In the spring, friendly Indians brought seeds of corn, squashes, pumpkins and beans to the English settlers, and taught them how to plant and to cultivate these strange crops. From them, too, the Pilgrims learned something of Indian cookery. Since there were no English words for the new food, such Indian names as hominy and succotash were adopted into the English language. The Pilgrims lived their first years in constant danger from unfriendly Indians, but in later years treaties were made in which the Indians lost much of their land. The Indians meant only to share their homeland. However, the English meant for the Indians to move away and to give up all rights to the land. This misunderstanding resulted in wars, in which the Indians were forced farther back.

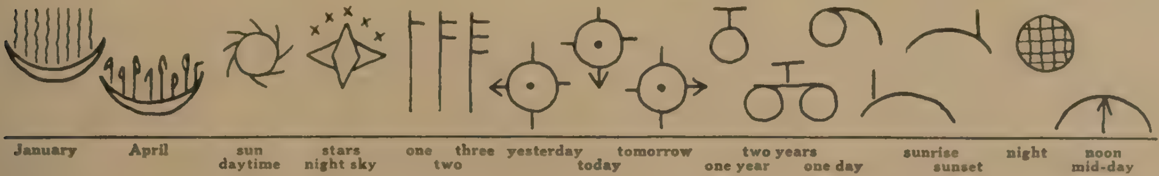
Forest Snowshoes, Eastern Canada

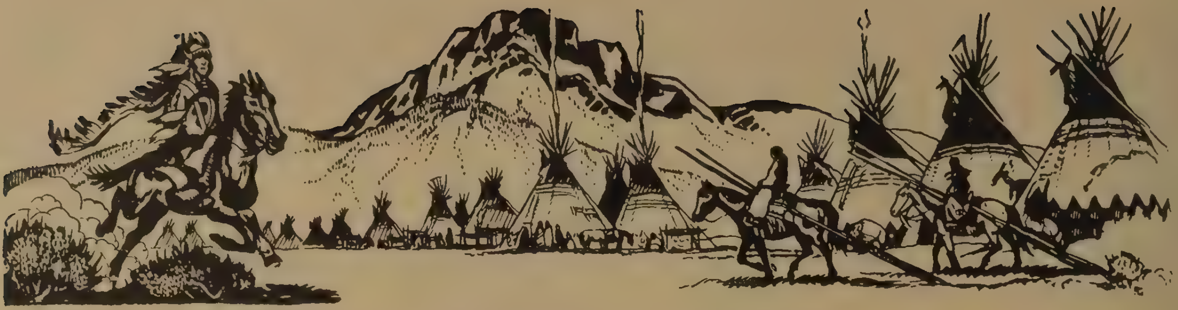
The region which we call New York was the ancient home of a powerful group of related tribes called the Iroquois. Each Iroquois tribe was made up of several clans. Members of a clan considered themselves closely related, almost like brothers and sisters. No man would marry a woman of his own clan. Children belonged to the Mother's clan. Women were important members of the Iroquois society. Each clan had its sachem or chief. When a sachem died, the clan held an election meeting at which each man and woman voted for a new sachem. Then the whole tribe held a meeting to decide whether they were satisfied with the newly elected sachem. If they were not, the clan would have to elect some one else.

In the Iroquois village, each house was strongly built of logs and poles, covered with heavy slabs of bark which overlapped like shingles and were held in place by an outer frame of poles. A house was usually from fifteen to twenty-five feet wide, and from fifty to a hundred-fifty feet long, divided crosswise into sections. Several related families lived in one house. For this reason, another name for the Iroquois is People of the Long House. Many Iroquois still live in New York, and a few in Pennsylvania and Wisconsin.

As English and French settlements increased in America, traders traveled farther into the forests, in search of furs which they obtained from the Indians in exchange for blankets, guns, beads and other white men's goods. All through the woodlands, when the traders first came to this region, there were Indians living in wigwams. These airy and convenient bark- or skin-covered houses were often quite large. The Indians found it pleasant and trouble-saving to have more than one family living in one wigwam.

From the Woodland Indians the traders learned to travel in canoes which could be paddled along streams and portaged from one stream to another. They learned to make moccasins and to travel over deep snow on Indian snowshoes, dragging their packs on light, strong toboggans. As the forest gave place to farms, most of the Indians disappeared from their old homes. However, many of our place names are from their language.

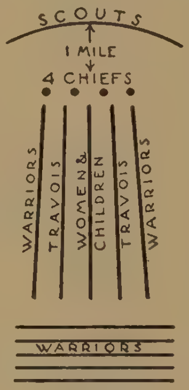




CAMP OF THE BLACKFOOT, A PLAINS TRIBE

Indians of the Plains

Coronado, the Spanish explorer, visited the southern edge of the Great Plains in 1540. He saw Indians there, traveling about and hunting the buffalo. Their dogs were loaded with tepees of buffalo skin and poles, which the Indians set up wherever they camped. The Plains Indians were glad to be friends with the first white men who visited their country. They were glad to get horses. Those wonderful, strong animals could carry much heavier loads than dogs. Then, too, on horseback a man could go faster than a buffalo, and hunting became easier and less dangerous. For about three hundred years after the coming of Coronado, few white men came to the plains country. Most of those few came to trade. The Indians could take their extra furs, skins and dried meat to the trading posts. They exchanged these goods for guns and ammunition, which made hunting easier, and for metal tools and kettles, wheat flour, sugar, blankets and other things.

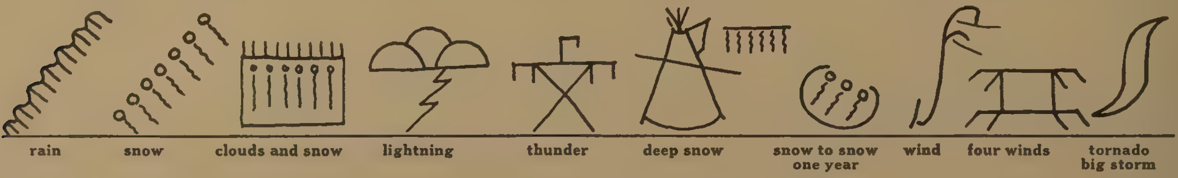


Plains Indian Line of March

Then, in 1804, President Jefferson sent two young men, Lewis and Clark, with a band of soldiers to explore some of the plains country. They were also to find the way to the Pacific Ocean and to try to make friends with the Indians of the Far West. Early one spring they started their boats up the Missouri River, which flows through the country of the Plains Indians. Lewis and Clark saw villages of tribes called Earth House People. The houses were built of strong logs and poles, thickly covered with earth and green sod, with a hole in the middle of the roof to let smoke out and light in. A village of such houses, looking like low, round hills, had a stockade of logs around it. The Earth House women planted corn, beans and squashes near their houses. The men often rode their horses out over the plains, to hunt buffalo. On long trips, they camped in tepees, such as those in which other Plains Indians lived the year around.

In a village of the Earth House People, where they stayed for a time, Lewis and Clark met an Indian girl called Sacajawea. She had married a white trader who lived among the Earth House People, but her home was far to the west, in the mountains between the plains and the Pacific Ocean. Lewis and Clark hired Sacajawea and her husband to go with them, to show them the way and to interpret the speech of the Indians that they met. In the western mountains, the explorers visited Sacajawea's people, the Shoshone, or the Snake, Indians, a plateau tribe. They lived on roots and berries, fish from the rivers, and forest animals. Sometimes they rode out on the plains to hunt buffalo, but such trips were dangerous, because the Plains Indians were their enemies. The Shoshone had many horses, which they willingly sold to Lewis and Clark to ride across the mountains. Sacajawea went with the explorers all the way to the Pacific and back with them. After the Lewis and Clark expedition, long lines of covered wagons began to move over the plains, taking pioneer families to new homes.

The Plains Indians began to be worried. There were so many white people it seemed that they would fill the whole country and leave no room for the Indians. What was worse, they were killing far too many buffalo. Dreadful fights ensued, but the Indians usually lost, for there were many more white soldiers than Indian warriors, and the white soldiers had much better equipment. Finally, the United States Government set aside reservations, on which the Indians were to live permanently.



PUEBLO INDIANS AND THEIR ACTIVITIES

Indians of the Southwest

WHEN THE Spanish explorers first visited the country southwest of the Great Plains, they found Indian towns which they called pueblos (a Spanish word meaning "village"). A pueblo may have no more than one or two houses, but they are very large, sometimes from three to five stories high, with apartments for more than a hundred families. Each upper story is smaller than the one below it. Instead of stairways inside, these houses have ladders outside. Formerly, the first story had no doors or windows, and could be entered only through the roof. It was used only as a storehouse. People made themselves safe at night in the upper stories by pulling up the ladders. Now that there is no more danger of enemy attacks, the first story is used like the others.

Kachina Doll
Tribal Emblem

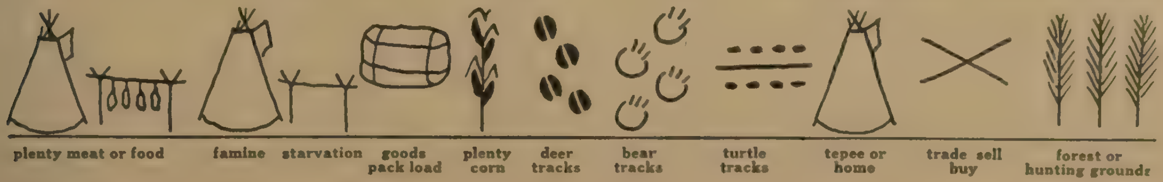
Pueblo walls are of stone and adobe clay. Logs and poles laid across the walls and plastered with adobe form the flat roofs. The women make the houses, with some help from the men, and keep them clean inside and out, plastering the inside walls with pink clay and sometimes whitewashing them. Nowadays, glass windows are sometimes used. The fireplace is in a corner of the living room. Besides building the houses, the women prepare the food, spending many hours in grinding corn in stone mortars. Corn bread is baked in outdoor ovens or in thin sheets on a flat stone slab over the fire. Pueblo women make such fine pottery that people in distant cities are proud to have it in their homes. Farming is the main work of Pueblo men.

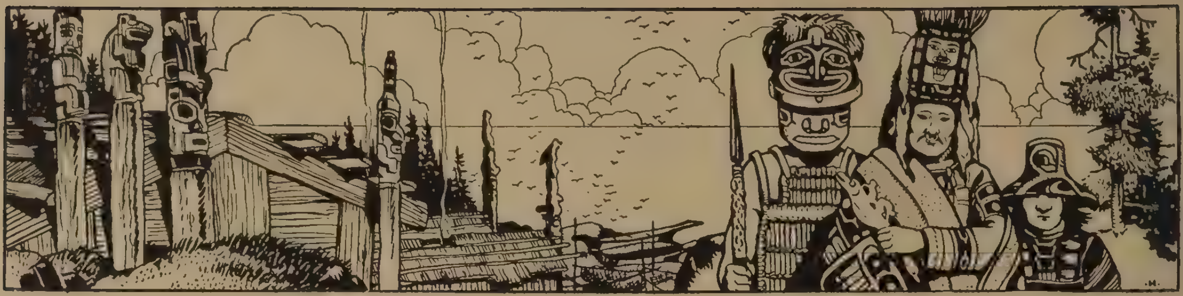
The Pueblo Indians seem always to have been peaceful people, not wanting to fight with their warlike neighbors, the Apaches and the Navajos. These Indians sometimes attacked the Pueblos, hoping to rob them of corn and other good things. Sometimes they came peaceably, bringing meat and skins to trade for corn and cotton cloth.

The Navajos were farmers at times, even before the coming of the white man. They are intelligent people, quick to learn new ways of making life pleasanter. Like the Plains people, they became horsemen as soon as the Spaniards brought horses into their country. They also domesticated sheep and goats, thus acquiring a supply of meat and wool. The Navajo women weave beautiful blankets of the wool of their sheep, using the same kind of loom that the Pueblo men use for cotton cloth. Navajo men do not weave, but they do work in the cornfields. Some of them make beautiful silver jewelry which they wear themselves and sell to white people. Navajo houses are called hogans. They are made of a round frame of logs, thickly covered with adobe clay. Usually there is a large hole in the roof, for smoke, and a door, but no windows. Some Navajos now build houses like those of white people.

Most important of the other tribes in the desert-like country are the Pima and Papago. Their villages of low, round, earth-covered houses are in the river valleys, where they can dig ditches and bring river water to irrigate their crops. They raise most of the crops and farm animals to be seen on other American farms.

Throughout most of the United States, the white man has so changed conditions that it is no longer possible for the remaining Indians to live as their ancestors did, but in the Southwest the change is not so great. There the Indians are still following their own laws and customs. Their houses, their cooking and their clothing show their own tastes.





NORTHWEST COAST HOUSES   WARRIOR, MEDICINE MAN, WHALER

Northwest Indians

Toward the end of the eighteenth century, ships of English and American fur traders began to visit the northwest coast of North America. They found a number of tribes of seagoing Indians living along this coast. In large canoes of cedar wood, often hollowed from a single huge log, these Indians went fishing for cod, halibut and salmon. They used spears and nets to catch many kinds of fish. Hooks of bone and wood baited with small fish and attached to long, strong lines made of certain kinds of seaweed, were drawn through the water from canoes, or set with floats and weights. The most important fish of all was the salmon. Every year, in the fall, these fish journeyed upstream in great numbers, to leave their eggs, called spawn, in mountain brooks.

At this time, the Indians caught enough to form a reserve supply of dried salmon for the whole year. The salmon were caught in weirs or in large baglike nets of nettle fiber. When the men were bringing in the salmon, the women were busy cooking them for feasts and preserving them for future use. Some were split, cleaned, rubbed inside and out with fresh leaves, and hung in the sun to dry. When partly dried, they were placed on a rack over the fire in the house, and smoked nine days before being packed away in baskets or cedar chests.

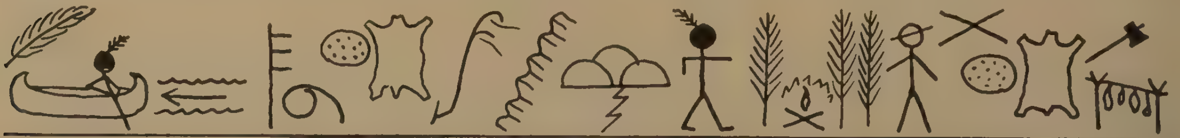
In spring, great numbers of oily candlefish, or olachen, were caught in weirs and dipnets. Fat boiled out of the candlefish was used in cooking and flavoring almost all the food used by these Indians, and was traded from tribe to tribe among those groups who were not able to catch enough candlefish for themselves.

Certain tribes went to sea in pursuit of whales, which they killed with harpoons. When a dead whale was towed to shore, it was divided among all the people of the village. The meat, oil and skin were all eaten, and the sinews used for strong ropes. The men who harpooned whales were specially trained, spent much time in prayer, and were highly honored for the important and dangerous work they performed.

Northwest Coast Design

The Northwest Indians sometimes went hunting on the mountain slopes. Bears, mountain goats and a few other animals furnished meat. The wool of the mountain goats was woven into blankets, and their horns were used to make spoons. The women gathered berries and roots which were an important part of their food. However, the most useful gift of the forest was the cedar tree. These Indians lived in houses of stone-hewn cedar planks fastened together with cords of twisted cedar bark or with cedar withes. Shredded and twisted cedar bark was used for many purposes. Mixed with wool or alone, it was made into clothing; it was used for mats, baskets and even a sort of armor for the warriors; and when beaten and rubbed until soft, it was used as towels and for the padding of babies' cedar-wood cradles.

These Indians believed that the spirits of sea and forest creatures were more powerful than men and could appear in the form of animals or men as they pleased. Each family had its own special spirit friends, called totems. After the white men brought steel axes, each family set up a carved, painted totem pole in front of the house.



Chief paddle canoe up river three day plenty skin wind rain lightning Chief go to camp in forest of white man trade plenty skin for ax food

Learning How to Read

HE who helps a child to learn to read takes upon himself the responsibility to—

- a. Create interests and experiences which provide a desire to read, if that desire has not already been kindled.
- b. Create procedures which stress the building of right attitudes.
- c. Recognize and provide equipment for learning.
- d. Provide situations which will lead to research readings.
- e. Create a taste in reading.

Every teacher who recognizes these responsibilities and meets their demands leads the child to the ultimate object in reading—the use of all reading materials.

It is not difficult to make a child see that reading functions in ways that are vital and full of meaning for him, if he who teaches that child understands the equipment for learning needed by the learner.

What is this equipment?

Naturally among the first qualities of which every child should be a possessor, in order to do any learning, is a healthy body, free from such ills as adenoids, bad tonsils, and malnutrition. He should have good hearing and good vision. These ills have often handicapped a child from getting a start and placed him in a classification of "dull child."

He should be provided with a background of experiences which will relate to the things and activities about which he will read.

There are many children who have the foregoing equipment who fail to get the most from their reading. They are the ones who are at cross points with those with whom they live and work. In other words, they have no happiness in their relationship to school, teacher, or their classmates. Besides a happiness in school relationships, each child should want to do his part in the activities of the group and have a desire to succeed in his own particular part or share.

In listing these elements of equipment one naturally takes into consideration the inherent mental ability of the learner.

The great majority of homes provide reading experiences before the child enters school. The book markets provide an ever growing number of lovely books for the child. These range from small books of a few pages containing such old favorites as Little Black Sambo, Peter Rabbit, and Mother Goose, to elaborate anthologies. In the latter classification the selections have been carefully and intelligently made to give the proper balance of old and new material. Stories and poems have been given equal consideration, and the material graded from the standpoint of vocabulary, story structure, ethical implication and subject matter. The accompanying illustrations are in fascinating colors, tell a vital visual story and have also been graded. Such books, which have been prepared with a full knowledge of the tastes and interests of childhood, make it a relatively simple matter to foster an early interest in reading.

The parent's attitude toward reading greatly influences the child. Not only that, but each parent can help a child in his reading desires by—

1. Reading to him *Mother Goose* and simple short stories, such as are found in Volume I of The Junior Instructor, and those mentioned in this article.

2. Developing a pride in building his own library. This library may consist of books that are of his own making. There are many kinds of books which children can make. Among these are—

   - a. Books of four or five colored pages with illustrations depicting Mother Goose characters. See commercial advertisements for pictures.
   - b. Books with pictures and short stories beneath the illustrations; suggestive titles—A Day on the Farm, My Pets, My Family, Visiting at Grandfather's.

3. Providing an opportunity to handle and care for books.

4. Calling his attention to words that he uses in his experiences. These words may be found in newspapers, books, commercial advertisements on billboards, as well as in magazines and newspapers. Often times it is fun to tag wellknown articles found in the home with name cards, thus the chair carries a label to remind the child of the form of the word chair so that he will recognize it wherever he sees the word.

5. Providing a challenge to thinking.

Talk over with a child his experiences. If he has recently made a trip to a farm, exchange thoughts on the subject of the farm. Guide him in his learning that the farm is a source of food. As he talks about the farm and formulates his understanding of the activities on a farm he will add words to his vocabulary.

In order to make those new words a permanent part of his vocabulary it is necessary that the words be used frequently. A home as well as the school can provide the following plans or devices for the frequent use of words.

1. Charts—
   These may be printed on cardboard, as illustrated on Page 286 in connection with the story of *The Three Bears*.

Each child may be provided with duplicates of the charts. These should be cut apart so that he may assemble them to match the uncut chart. A child likes this exercise because he feels that he has had a very definite part in building it, for it is a record of his experiences. He also has a confidence that he can read it, and derives a satisfaction from his ability to do so.

2. Bulletin Board—
   The bulletin board may be an old screen such as is shown in the illustration on Page 287.
3. Booklet Making—as described previously in this article.
4. Card Catalog—
   Encourage each child to catalog his own library.
5. Read and Do Exercises.
   Give to the child pictures of well known characters in their settings. Ask them to color the pictures according to printed directions. As for example, in coloring a picture of Mother Goose:
   Color the sky blue.
   Color the grass green.
   Color the goose grey.
   Color Mother Goose's dress black.
   Color Mother Goose's hat black.
   Color Mother Goose's apron white.

Teachers always find it easier to accomplish results in reading when they have the cooperation of parents.

In order to have this cooperation, the parent and the teacher should be in harmony in the methods which they use to provide the child with interests in reading and their methods of developing the ability to read plus the desire to read.

Besides the picture books, the pupils should have ready access to a number of pre-primers, primers, and readers. These are especially written to meet the interests and the needs of the children. Some one of them should be used from the beginning for the formation of an early vocabulary. Later the book will form the main content of the child's reading.

EQUIPMENT

Like all good workmen, the teacher must have materials and tools with which to accomplish the best results. Choose for the teaching a room large enough for such activities as jumping, running, and ball tossing, and hang in it a blackboard. A framed board may be used, or one of simple, inexpensive material, such as hyloplate, purchased by the foot. A printing machine having half-inch letters or a heavy crayon will be of use in printing words and phrases on "perception cards." For these there is needed also some heavy manila paper cut in strips ready for use. There should be at hand many toys, pictures of children and animals, scissors, plain white paper, a pot of paste, and colored and white chalk. An abundance of picture books is desirable.

Each of these primers is also accompanied by a teacher's manual which will provide detailed helps for each consecutive lesson, including pre-primer work and suggestions for presenting phonics.

TYPICAL LESSONS FOR THE CHILD OF FIVE OR SIX YEARS OF AGE

Now all is ready for the reading of such lessons as are suggested by the types below, in each of which the child begins to recognize several sentences and a few words. Such lessons are carried on for the first two or three weeks. During this time the child is learning to look to the symbol for directions when the printed word takes the place of the mother's voice. The child is really reading from the first day. The mother should keep in mind that every word should be accompanied by physical activity, since use of muscles intensifies the recognition of the symbol. In the work following, simple as the plan looks, there are really four steps which must be taken to form the right habits.

First Step: Play the game from spoken directions.

Second Step: Play the game from written or printed directions in exactly the same order as from the spoken, care being taken that the child retain the same attitude for the printed word as for the oral.

Third Step: Omit the activity and let the child read the sentences. Do not worry if not much remains at first; remember the ideal and the way the child builds up his world of interest from wholes.

Fourth Step: Extract one unit of thought for drill. Hold the child responsible for this. Continue the drill but vary the method.

FIRST LESSON

Material: A rubber ball.

(The words given below in italics are written or printed; the others are spoken.)

First Step: Mother goes to the blackboard saying, "I am talking to my little girl and here is her name, *Helen.* (The name is usually the child's first interest.) *Helen* (pointing to the name), let us have a game of *ball.* Writes and says the word at the same time.) Do you see a *ball* anywhere about?" (This time the mother does not say the word.)

Now the game is played; the mother rhythmically singing:
"Get the ball."
"Bounce the ball."
"Bounce, bounce, bounce the ball."
"Bounce the ball to me."
"Bounce, ball, bounce."
"Bounce, ball, bounce."

Second Step: "Now we will play our game again, and this time my chalk will tell you what to do."

Get the ball. (The child looks and obeys.)
Bounce the ball. (The ball is bounced once.)
Bounce, bounce, bounce the ball. (Three times.)
Bounce the ball to me.
Bounce, ball, bounce.
Bounce, ball, bounce.

Third Step: "Helen, read what the chalk tells you to do." (Help her if she cannot get it, by referring to what she did next.) Let her read it several times.

Playing the Game from Printed Directions

Fourth Step: "Find the part that tells you what this is. (Holds up ball.) Let's put the ball right here under its name. Can you find it in another place? (Be sure to have the word said each time it is found.) Where is the part that says *bounce?* Find it in another place. (Do the same with other words.) Now, Helen, close your eyes while I say a rhyme.

"When I say 'open your eyes' you must tell me what you see." The mother then writes the word clearly or has a card with the word *bounce* on it and another with *to me.* She puts one of them in view and sings,

"Helen must close her eyes,
So she cannot see.
Now, then, she may open them:
One, two, three!"

By the time the mother says "three," the child should say the word before her. There is a time limit given, which is shortened as power is gained. Then the mother does the same with the other words. The proud Helen thinks, "She can't catch me!"

SECOND LESSON

Material: Rubber ball.

Game:

Get the ball.
Bounce the ball.
Catch it.
Bounce the ball.
Catch it.
Throw the ball to me.
Bounce the ball to me.
Catch it.
Throw the ball.
Catch it.

Perception Cards: Catch it, throw.

THIRD LESSON

Material: Two balls, one big and one little.

Game:

Get the big ball, Helen.
Bounce the big ball.
Catch it.
Get the little ball.
Throw the little ball to me.
Roll the little ball.
Throw the big ball.
Roll the big ball.

Perception Cards: roll, the little ball, the big ball, big, little.

FOURTH LESSON

Material: Two tin pie-plates, one larger than the other.

Game:

Get the big plate.
Spin the big plate.
Catch it.
Pick up the big plate.
Get the little plate.
Spin the little plate.
Catch it.
Pick up the little plate.

Perception Cards: Spin the plate, plate, spin, pick up.

FIFTH AND SIXTH LESSONS

Material: The same balls and plates.

Game: I say

When the mother says "I say" the child should perform the action, and if she says only the action she should stand still. This may be played as a deaf and dumb game by writing on the board and obeying the chalk.

I say run to me.
I say fly.
I say skip.
I say roll the big ball.
I say jump.
Run.
I say throw the little ball.

Mother Using Perception Card

Spin the plate.
I say bounce the little ball.

Skip to me.
I say stamp.
I say fly, etc.

(Repeat the new words.)

Perception Cards: run, fly, skip, jump, stamp, I say.

(Words like *dance, sing, hop, call,* may be added.)

SEVENTH LESSON

Game: Can you?

I can hop.
Can you?
I can stamp.
Can you?
I can fly.
Can you?

I can call.
Can you?
I can sing.
Can you?

I can jump.
Can you?
I can run.
Can you?
I can roll the ball.
Can you?

Perception Cards: I can, Can you?

EIGHTH LESSON

Game: Have you?

I have a little plate.
Have you?
I have a little ball.
Have you?

I have a big plate.
Have you?
I have a big ball.
Have you?

Perception Cards: I have, Have you?

WORDS TAUGHT IN THE ABOVE LESSONS

1. ball, bounce, the, to me.
2. catch, throw, it.
3. roll, little, big.
4. plate, spin, pick up.
5. I say, run, fly, skip, stamp.
6. dance, hop, sing, call.
7. I, can, you.
8. have.

INCIDENTAL READING

Much incidental work may have been accomplished along with this logical series. From the first the parent can print *good morning, good night, how do you do?* not trying to fasten these sentences at first sight. In fact, it is not necessary, since the little girl meets words over and over in much the same way as she meets her toys.

Obeying the Chalk

Remarks on the weather may be allowed to sink in: *cold, snow, the sun is shining, warm, Jack Frost, icicles,* etc.

Actions may be suggested, such as: *Close the door, Open the window.* The mother may make believe that she cannot talk, but must write her directions.

Words may be taught by Dennison's trunk tags, each with the printed name of an article of furniture being attached to that article. Thus in wandering about the house, the child will meet *stool, bed, picture, bookcase.* She will also see *desk, chair, chair,* over and over. She is constantly meeting the symbol related to the thing symbolized. This will probably look very queer to the neighbors, but the mother is teaching reading in the best way possible, by absorption. And the child and mother are playing a game, the influence of which will not be ended so long as they both shall live.

ORAL READING

The next set of lessons is about other children, animals, and environmental interests, and is based upon words found in the best primers. The mother should look over the primer with which she has decided to begin, and, taking out the words of the first twenty-five or thirty pages, set to work to familiarize the child with that vocabulary before the book is put into her hands. If she is to understand and express easily the stories in the book when she begins to read from it, she should swing along and not falter.

If from the previous lessons, there has been stress laid upon important words and less force given to unimportant ones, it will not occur to the child to stop to pound out *a* or *and* or *the* in a phrase. Word-calling habits should be avoided. The perception cards will assist in free expression if carefully used. Never teach *a* or *and* alone. *A good boy* should be read so that the *a* is tucked in. *Tried and tried* should have stress on the *tried* so that it sounds somewhat like this: "*tried* and *tried.*" The child can learn to recognize a group of words much the same as the adult recognizes a picture, by its main characteristics. *The Gingerbread Boy* has a certain look easily remembered and can be taught all at once.

After the parent has decided upon the vocabulary, she next sets to work with this problem in her mind: "On the one hand is my child with her love for stories, nursery rhymes, picture and activities; on the other, this array of words which she must master in order to do independent work. How may I bring the two together?" No one learns a new thing unless it has its foundation in an old.

GOLDILOCKS IN THE THREE BEARS' HOUSE

Since the youthful reader has been equipped in the nursery with much of the inheritance of the race, she may now also be given three types of lessons; one based upon a story; a second upon a rhyme; and a third upon a work of art. These are to supplement and reinforce the primer's vocabulary. There should be an endeavor, however, to keep so far away from the actual stories of the book as to leave them fresh oral reading.

STORY LESSON

Material: The picture of Goldilocks in the Three Bears' House.

Lesson: The mother says, "Let us talk to Goldilocks today, since she has come to see us. She is a dear little *girl* (writes the word as she says it). I know some other little *girls*, too. (This time she writes the word without saying it.) Cinderella is a dear little *girl* (points to the word). Sleeping Beauty is a dear little *girl*. My! there are many; but this morning we will talk to Goldilocks (writes the name as she talks). "What a long, funny name. Helen, read it for me. Well, this dear little girl (points to the word) found a *little house* (writes the words as she says them) in the woods one day. Do you remember how *Goldilocks* (points to the name) went into the *house?* (writes). Let us talk to *Goldilocks*. (Points to name) We are polite; so we say:

Good morning, little girl.
"Let's tell her her name."
You are Little Goldilocks.
"Now look to see what she has in her hand.
"Let's tell her what you see."
I see your flowers, little girl.

"Do you remember that she saw a table in the little house? What was on it?" (Three bowls.)

"We will tell her that we see them, too."

I see a big, big bowl.
I see a middle-sized bowl.
I see a little bowl.

"Suppose we ask Goldilocks what is in the bowls."

What is in the big bowl?
What is in the middle-sized bowl?
What is in the little bowl?

"Does Goldilocks know this is a bears' house?
"Perhaps she ought to run away."

Run, little girl.
Run, little Goldilocks.
Run, run, run.

"Helen, read all we have written. Let's point to the things we are telling about." *(Girl, house, bowl, Goldilocks.)*

At this stage, the mother tells the words or phrases Helen does not remember, making no effort to have her find out for herself. As soon as the child knows enough of phonics to help herself, the mother may cease telling. At the close of the lesson there is a drill.

Drill: "Helen, you may be Goldilocks, and these little words will be the flowers in the woods. Can you pick them?" The mother then puts the new words on the board, and as Helen picks them (gets them right) they are rubbed off from the board.

To supplement this drill, parts of sentences may be *written* on stiff paper, thus:

your flowers	Good morning	Little Goldilocks				
little Goldilocks	A big, big bowl	little girl	I see	Run	I see	I see
Run, run, run	A little bowl	little girl	A middle-sized bowl	little girl		
Run	You are	in the little bowl	in the big bowl	I see		
What is	what is	in the middle-sized bowl	what is			

Let the child cut them on the lines and rearrange them to say things about Goldilocks. The purpose of this is to keep the form before the child and to make her think what the form means.

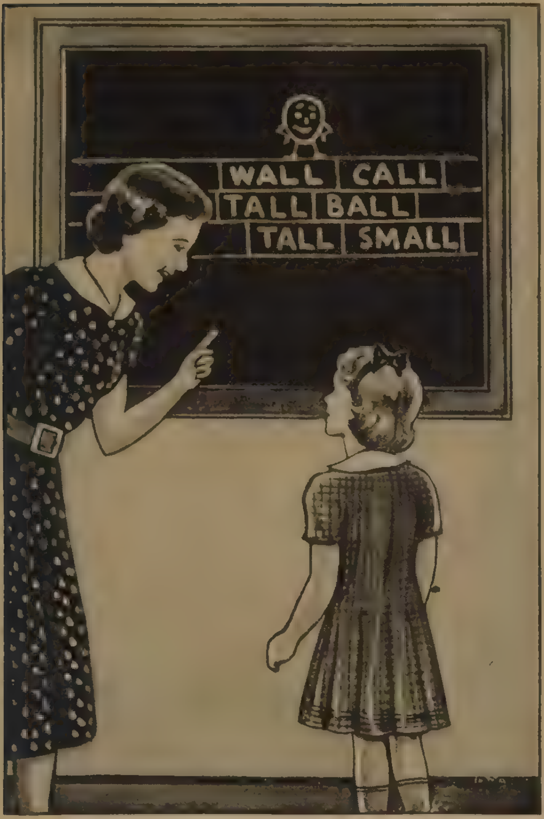
There are other pictures of fairy-tale folk, such as *The Three Pigs* and *Cinderella*, which will be interesting to read about. Stories with a great deal of repetition are always attractive to children, and furnish a natural means for using words over and over. Such stories are: *Three Billy Goats Gruff*, *The Gingerbread Boy*, and *The Old Woman and Her Pig*. There are excellent chapters on story telling and dramatization in this work that are very valuable in teaching reading. It would be a good thing to study these chapters in connection with the material outlined here.

THE NURSERY RHYME LESSON

The mother says, "Helen, tell me the story about Humpty Dumpty, and I will write it here."

"Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall;
All the king's horses and all the king's men
Could not put Humpty Dumpty together again."

"Now read it from the board. Find the part that says 'Humpty Dumpty sat on a wall!' Find 'Humpty Dumpty had a great fall.' What does this say? (Mother points to "All the king's horses and all the king's men.") Find the part that tells what Mother Goose calls the egg. (Humpty Dumpty.) Find it in another place. I see it somewhere else. Touch the part of the story that tells what



Phonetic Work in "Humpty Dumpty"

he was sitting on and say its name. (Wall.) What happened to him? Touch the part that tells you so. Read the first line, the fourth line, the third line. Read the part that tells about the horses and point to it. (All the king's horses.) Read the part that tells about the men and point to it at the same time. (All the king's men.) Here is Humpty Dumpty's wall. (The parent makes sentences as suggested at the end of the Goldilocks lesson and cuts them up.) Let me see if you can be smarter than 'All the king's horses and all the king's men,' and put Humpty Dumpty together again."

Lessons may be based on Humpty Dumpty as follows:

Chapter One—"Pride Goeth Before a Fall."

Humpty Dumpty sat on a big wall.
He sat, and sat, and sat.
He liked the big wall.
Humpty Dumpty sat in the sun.
He sat in the sun and sang.
He sang, "It is a big wall."
He sang, "It is a big, big wall.
"I will not fall."
He sang, and sang, and sang.

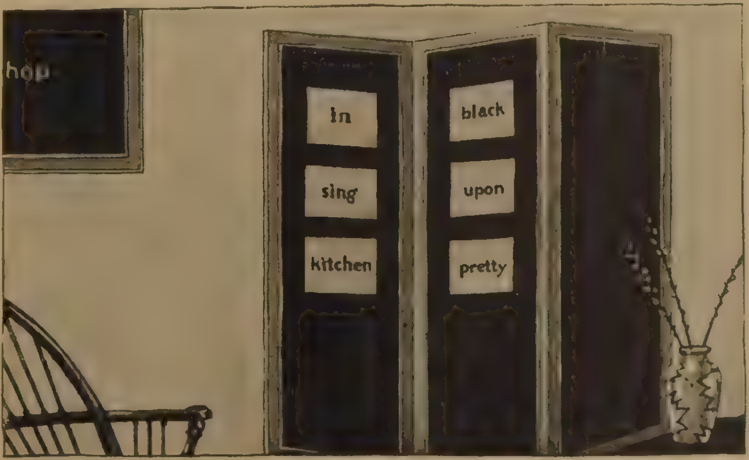
Chapter Two—The Tragedy.
Humpty Dumpty had a fall.
He had a great fall.
All the king's horses and all the king's men,
Could not put Humpty Dumpty together again.

Chapter Three—The explanation.
He was an egg.
Ha, ha!
He was an egg.

LESSON BASED ON A FAMOUS PAINTING

The mother says, showing a picture of "A Helping Hand,"* "Today Grandpa takes his little girl out in the big boat with him. He is going far out on the water to fish. Can you see the nets in the boat? This little girl is eager to help Grandpa. The picture is called 'A Helping Hand.' (Points to the words under the picture.) What does that mean, Helen? Yes; she thought she was helping him to pull the big boat. Let's make believe that Grandpa is talking. Watch and tell me what he says." (Read from board or printed chart, rhythmically as if the boat were moving. This will help with eye training.)

One, two, three, four
Help Grandpa pull the oar.
The boat is big.
The oar is hard to pull.
I need my little girl.
I need my little girl to help me.
You are my little helping hand.
Grandpa needs a helping hand.
Here we go.
Here we go with a big, big pull.
One, two, three, four,
Help Grandpa pull the oar.
The little girl speaks and this is what she says:
See me pull, Grandpa.
See me pull the oar.
The oar is hard to pull.
Grandpa, I will help you.
I will help you pull the boat.
Here we go, Grandpa.
Here we go with a big, big pull.
One, two, three, four,
See me pull the oar.



How to Use an Old Screen

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*See page 377.

The following words and phrases are the important ones used in a half-dozen modern primers.

Pets

bird
kitten
hen
dog
cat
rabbit
horse
chicken
squirrel

Food

bread
butter
egg
water
corn
milk

Family

sister
brother
baby
papa
grandpa
mother
man
father
girl
boy

Toys

doll
train
bell
top
boat
table
flag
book
drum
sled
kite
ball

In the Sky

moon
star
sun
sky

In the Garden

garden
trees
plant
leaves
flowers
grass

Action words

buy
bake
catch
came
fly
feeds
go
going
gets
did
run
do
saw
see
sleep
eat
take
throw
walk
help
jump
look
like
let
made
make
put
play
said
say
stop
wish
give
sit
wash
want

Description Words

old
little
cold
good
long
fast
round
large
new
big
dear
small

Colors and numbers to ten.

Other words

mew-mew
rock-a-bye
peek-a-boo
hippity-hop
bow-wow-wow
rub-a-dub-dub
hurrah-hurrah
cluck-cluck
me-ow, me-ow

In the House

chair
house
floor
school

HARD NUTS TO CRACK

The following words are the hardest in our language for children to recognize, for which reason they should be brought before the field of vision over and over. The parent would do well to make cards with these words on them and have them used again and again, limiting the time given for recognition. Progress may be gauged by the fluency of answer. These words must become habitual. The approach should be varied.

there
there is
there are
this
this is
was
every
I have
You are
what
then
here
Here is
Here are
saw
very
I see
You have
who
which
which are
Where is
Where was
so
how
I am
she
once
with me
by me
to me
on
no one
who is
I was
he
Can you
of
off
were

TRANSITION FROM SCRIPT TO PRINT

Transition from script to print may seem a formidable undertaking, but in reality it is quite simple. The child recognizes with little effort the same word written or printed. When the stumbling place comes, the printed word may be put directly beneath the written one and then removed. A story printed and written may be placed side by side, one being covered while the other is read, the script being uncovered during the reading of print only for interpretation. Thus quite rapidly the connection is made in troublesome cases.

USING THE BOOK

The time has come now for reading from the book. The kind of reading will depend entirely upon the richness of the association that has been made between symbol and life. There should be eagerness to get at the book, to find out "what it says." If there is happiness in the effort, and the ground work is secure, the child will read off the first twenty-five or thirty pages of a primer with ease. Once started, momentum will keep him going. If possible, the easy parts of several primers should be read first. The parent, who by this time will have become a wise judge, will be careful to select so as to avoid mechanical readers. Right use of the book requires care in handling, which may be inculcated early. Holding the book at the right distance from the eye, how to turn the pages and how to find the place require careful supervision at first. Whenever the reading drags there should be a return to action and dramatization work.

THE MOTHER'S READING

It will be found profitable for the mother sometimes to read aloud in her best and most sincere style a story from the primer, and thus create an ideal of excellent reading. To say, "Helen, read that again and read it better," will have no meaning unless Helen knows good reading. It is not well to read a sentence and allow the child to reread it afterwards for copy, but the mother may take part by interspersing her own reading in that of the child, thus giving the lesson a swing by bringing the standard often into the foreground.

Seeing the Results of Independent Work

PHONICS

In the discussion of the daily program, mention was made of fifteen minutes a day for phonics, or sound work. The study of this most important phase of reading will now be considered. The child has been recognizing words and phrases as we do pictures, from the way they look. All this while she must also have been helped toward independent reading by knowing the way words sound. Care must be taken that this process be kept separate from reading until such time as the child has tools enough to help herself. We said above that the mind of the child works in wholes. Then how may we present phonics so that she may willingly accept it, since this method means the analyzing of words into their component sounds? Clearly by the concrete. Very early in life the baby begins to imitate animal noises. Fortunately for the mother, the alphabet may be broken up and taught by natural sounds as in the chart on the next page. The object is to teach at first nine or ten consonant sounds and some *phonograms,* which we call families, then more consonants and more families, until there are enough combinations learned to find out how to pronounce very many new words without the mother's aid.

When Helen knows the sound of *f, b, c, h, m, p, r* and the family *at,* she will recognize by sounding *fat, bat, cat, hat, mat, pat, sat,* and guess at many combinations in which they exist. Another family, *ill,* will give her *fill, bill, hill, mill, pill, sill.* When advancement has been made in sounding, the child is able to get words like *interesting, understanding,* etc. She should develop an attitude which makes her eager to attack any words with these weapons for vanquishing them. The idiosyncrasies of the English language may puzzle her, as they do us all at times, but if she tastes victory often enough she will be ready for a fresh attack.

Each of the teacher's manuals accompanying the primers suggested contains detailed helps for the organization of and presentation of phonics. It is recommended that the author's plan be followed. If, however, such materials are not at hand, the parent may start the phonetic work by saying the word very distinctly, emphasizing either the first or the last letter. A little play will help. A table filled with tiny, attractive toys may be talked about in the "slow way." "Helen, bring me the d-oll. Here are your d-ishes. Let us set the t-able for the d-olly." The parent and child may then play by always speaking of the dishes in the "slow way." If a variety of toys is used in this way, a never flagging interest will be aroused. At another time the mother and child may play "follow my leader," the follower imitating the leader in saying "ch-air," as she touches that article, "b-ed, b-ook, t-able, d-esk, r-ug," etc.

The following game is fun.

The mother says: "Helen, I am thinking of a word which begins with m." (Mother makes the sound of *m,* being careful to press the lips together.) Helen asks in the long way:

"Is it m-amma?"

"No; it is not m-amma."

"Is it m-ilk?"

"No; it is not m-ilk."

"Is it m-oon?"

"Yes; it is m-oon."

Now Helen may think of a word beginning with the sound the clock makes—*t.* And so the game goes on.

TYPE LESSON

"Teddy lived in a little house in a big city. He had a dear little baby sister who slept all the time. Teddy had to keep very still, so still that he could hear the clock tick or he would wake her. The big clock in the hall said *t-t-t-t.* Here is the way that sound looks. (Mother prints a *t.*) Can you make the clear sound of the big clock? Teddy looks up and says *t-t-t-t* to the clock. Then he tip-toes into the parlor and listens to the little clock there. *T-t-t-t,* said the little clock, in a hurry, 'Keep still, tiny Teddy.' 'My! I am tired of doing that,' said Teddy. 'Come here, dearie,' said his mamma, who overheard him, 'and we will have a game.' This is what she played. 'How many words can you give me which begin with *t?*'" (Makes the sound.) "Let's see if you had been Teddy what you would have said."

The child with the mother's help gives such words as *top, toys, tail, trap, tick-tock,* etc. Mother may then give the words and the child tells if the *t* is at the beginning or the end. The *t* is written often. At the end of the lesson the child may draw all the things she can think of beginning with *t.*

The next day the story of Teddy may be continued. "While the little boy was trying hard to be still, the big dog came bouncing in all out of breath, *h-h-h-h,* and frightened the cat, who humped up her back and said, *f-f-f-f.* Then Rover growled *r-r-r-r* and they had an exciting time." Lists of words are given with each sound. "Helen may find the sounds *t, h, f, r* in her book." After ten consonants are taught, the mother may introduce the families. "This is the day when the *ill* family comes to see us. Let's see if we can name many of the words in that big family," says the mother. The following words are named:

bill *fill* *gill* *hill*
kill *mill* *pill* *quill*
rill *sill* *still* *will*

Device for drill: The mother says all but the last word, the child supplying the right word from the members of the *ill* family, which are printed on paper or written on the blackboard.

"Keep ——,
Baby's ——,
Mother has sent for a plaster;
Then a ——,
Which surely ——
Make baby mend all the faster."
"Birdie with a yellow ——
Hopped upon my window ——."

DEVICE FOR *eep*

Little baby, go to *sleep,*
Over you a guard I *keep.*
Dream of birdies and of *sheep,*
Little baby, go to *sleep.*

Reading for Enjoyment and Information

Bristol-Myers

Birdies singing *peep, peep, peep,*
They are talking in their *sleep.*
There you go in dreamland *deep,*
Sleep, my darling baby, *sleep.*

DEVICE FOR *ick*

My home was in an egg shell *thick,*
It was too small and made me *sick.*
So one fine day I gave a *pick,*
And out I came, a fluffy *chick.*

After a few families have been taught, the child can recognize many new words independently and should attempt to say in meeting new words all the letters the sounds of which she knows. Following is a partial list of families to be taught:

ack
ad
ag
ail
ake
ame
an
and
ap
ar
ark
ash
at
atch
ate
aw
ay
ear
eat
eb
ed
ee
eed
eep
eg
ell
en
end
est
et
ick
id
ide
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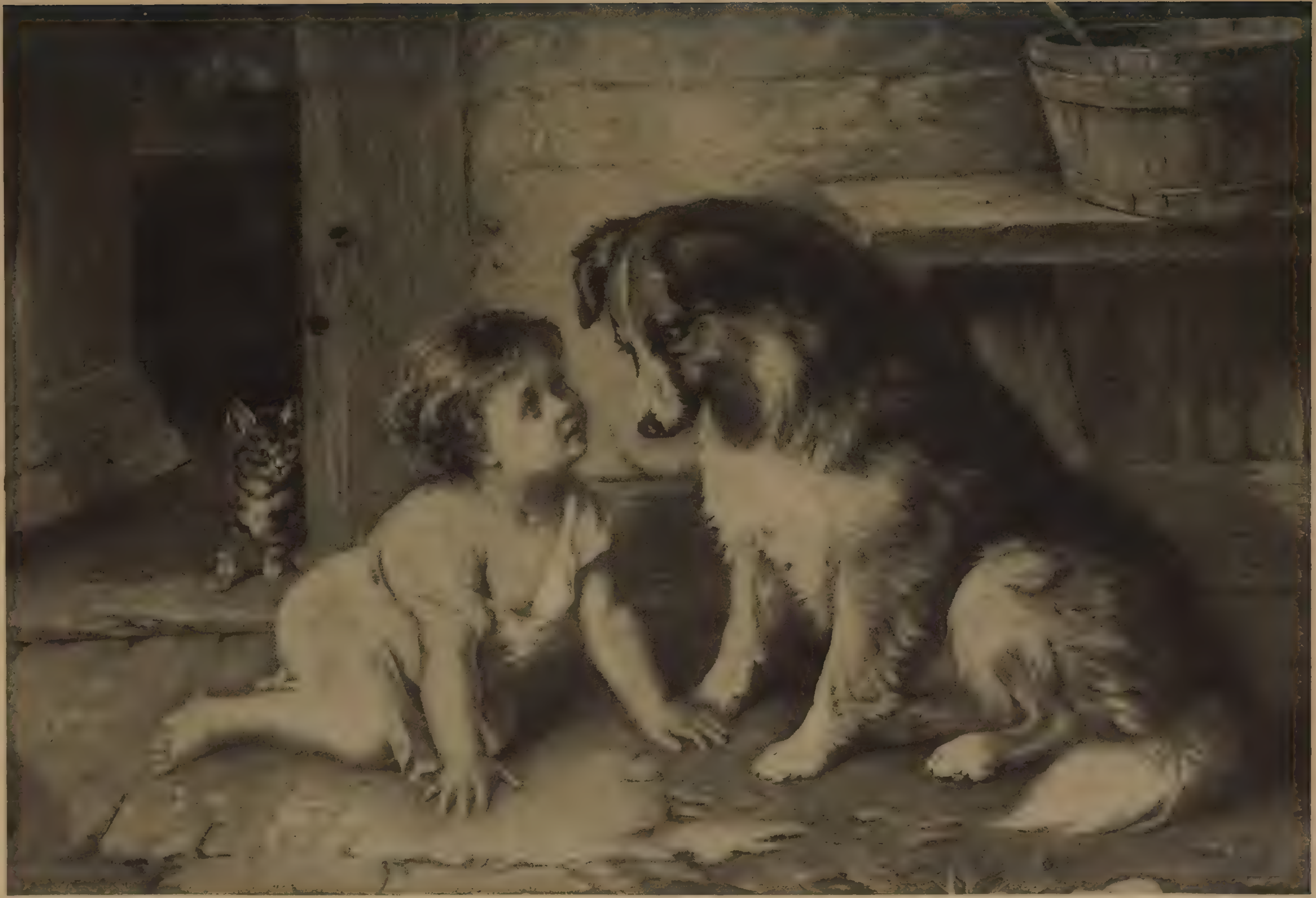


C. A. Holmes

CAN'T YOU TALK?

(A picture on which Reading Lessons may be based, similar to the Goldilocks picture.)

If the parent has trouble in sounding any letters, she may think of a word in which the letter occurs and listen to the sound as she makes it. The hardest sounds are:

B, as in *ball*. This is made with very little sound, down in the throat. It should not explode as *buh* but be made with the mouth closed.

D, as in *dove*, like *b*, except that it is formed with the tongue instead of the lips. It should not be said *duh*.

G, as in *goat*, is a sound which is finished in the throat, not *guh*.

All through the phonics work the parent should notice enunciation, and work for clear sounds. There should be no cheating of letters.

One of the most important phases of early training is correct enunciation. If the child lisps, see that the tongue is kept in behind the teeth on words with *s*. This lisping may come when the front teeth are out, but should not be allowed to remain after the permanent teeth appear. If he says "wery" for "very" he should be led to bite the lower lip with the upper teeth on the *"v"* sound. The child who says "one, two, free," for "one, two, three," can be taught the sound *"th"* by biting the tongue between the teeth and forcing the breath out at the point of contact.

Upon this early training in clear enunciation much of the child's future will depend. No work will ever take the place of this care in speech which is supervised by the mother.

INDEPENDENT WORK

One weakness of private training is over-supervision, which may result in making the pupil look to the parent whenever he encounters a difficulty. To avoid this, and to employ another means for fastening the words developed in lessons, independent work like the following is advised:

Pieces of cardboard about six inches by four inches may be used on which are pasted pictures, such as may be found in books or old magazines, of girl, boy, baby, squirrel, rabbit, house, tree, etc., with the word naming the picture underneath. On other slips are printed or written words which match with the words joined to the picture. This method again associates the symbol with the thing symbolized. Later, the printed word is clipped from the card and the child makes the association between picture and word independently. An illustration of such work is given on pages 294-298.

Stories are prepared and read and then cut up into words or phrases and rearranged to say things, as illustrated in the lesson on Goldilocks.

Show the child how to make a book for himself. Use manila paper, and let him decorate it on the outside if he wishes to do so. To fill it, as his power to get words for himself increases, he may cut from old magazines and paste in his book all the words that he can recognize and say. Later he can put words together and paste sentences. This is always a pleasure to the child, because it is his work from start to finish. He has created a book even before he can write.

Colors are always interesting to children. Their names may be taught by making a color dictionary. For this, different colored scraps of oblong cloth are pasted on a chart and the color-name printed after each. Reference to this dictionary may be made when a name for a color is not easily recognized. As often as possible the printed symbol should take the place of the voice.

Numbers may be taught in the same way. A chart with *one* printed on it and a picture of one thing, perhaps an Indian; *two*, and pictures of two Indians, and so on, is instructive and interesting, if at the same time the child says the verse:

One little,
Two little,
Three little Indians;
Four little,
Five little,
Six little Indians;
Seven little,
Eight little,
Nine little Indians;
Ten little Indian boys.

Figures may also accompany the pictures, they being taught at the same time.

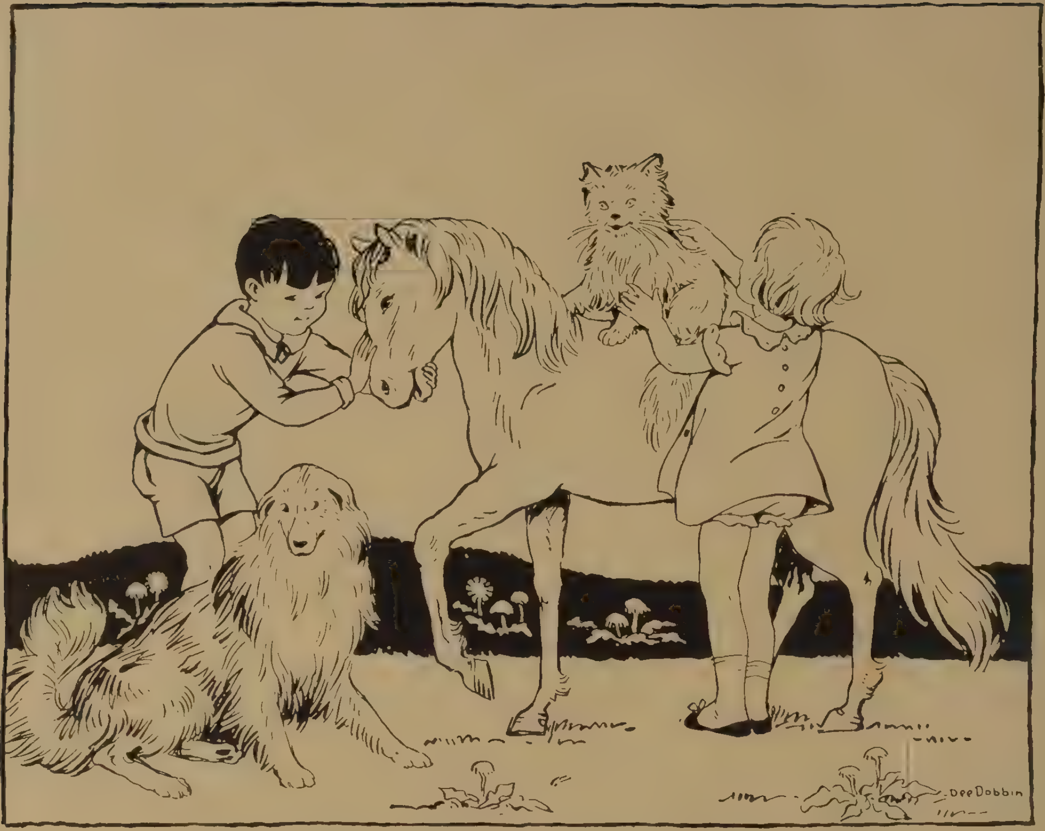
The work thus outlined will probably, if consistently and patiently carried out and expanded by the originality of the mother as she senses the needs of the particular little Helen or Robert at her knee, extend through a period of four or five months. At the end of that time the little one will pass into the First Reader class, devouring with independence and interest the adventures of Robinson Crusoe, Peter Rabbit and the personified beings of Aesop's Fables. Unvarying interest, but only occasional suggestions as the unusual is encountered, will now be needed from the mother-teacher.

In all home instruction or practice, aim for clear enunciation in the child. This is made an important point in the above article, and some methods of training are suggested. This is especially necessary in home training where the loving friends are apt to delight in little mannerisms of speech and cute expressions which may be of a form seriously to impede the expression of the child when older grown.

LESSON ONE—"GOOD MORNING TO YOU"

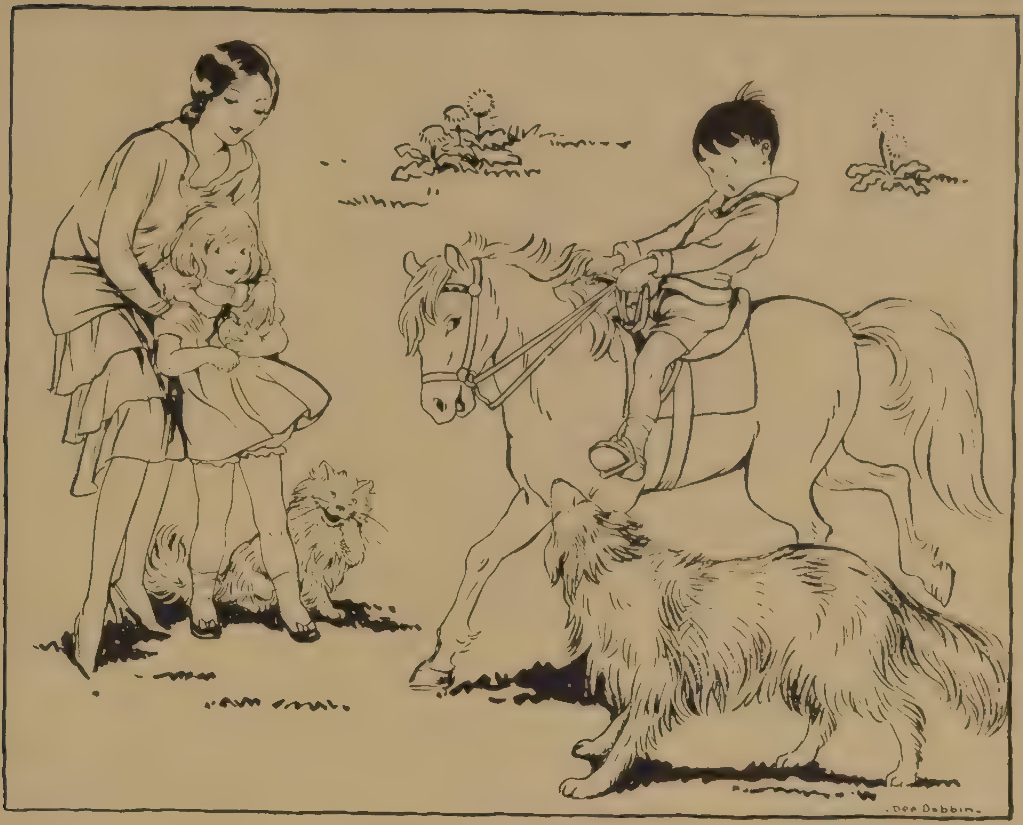
"Good morning, little boy.
Good morning, little girl.
I am Peter."
"Good morning, little boy.
Good morning, little girl.
I am Polly."
"Good morning, little boy.
Good morning, little girl.
I am the cat.
My name is Dick."
"Good morning, little girl.
Good morning, little boy.
I am a collie dog.
My name is Laddie."

"See the big, big house.
I live in the big, big house,"
  says Polly.
"I live in the big, big house,"
  says Peter.
"I live in the big, big house,"
  says Dick.
"I live with Peter.
I live with Polly."
"See the little, little house,"
  says Laddie.
"I live in the little,
  little house.
I like my little house."



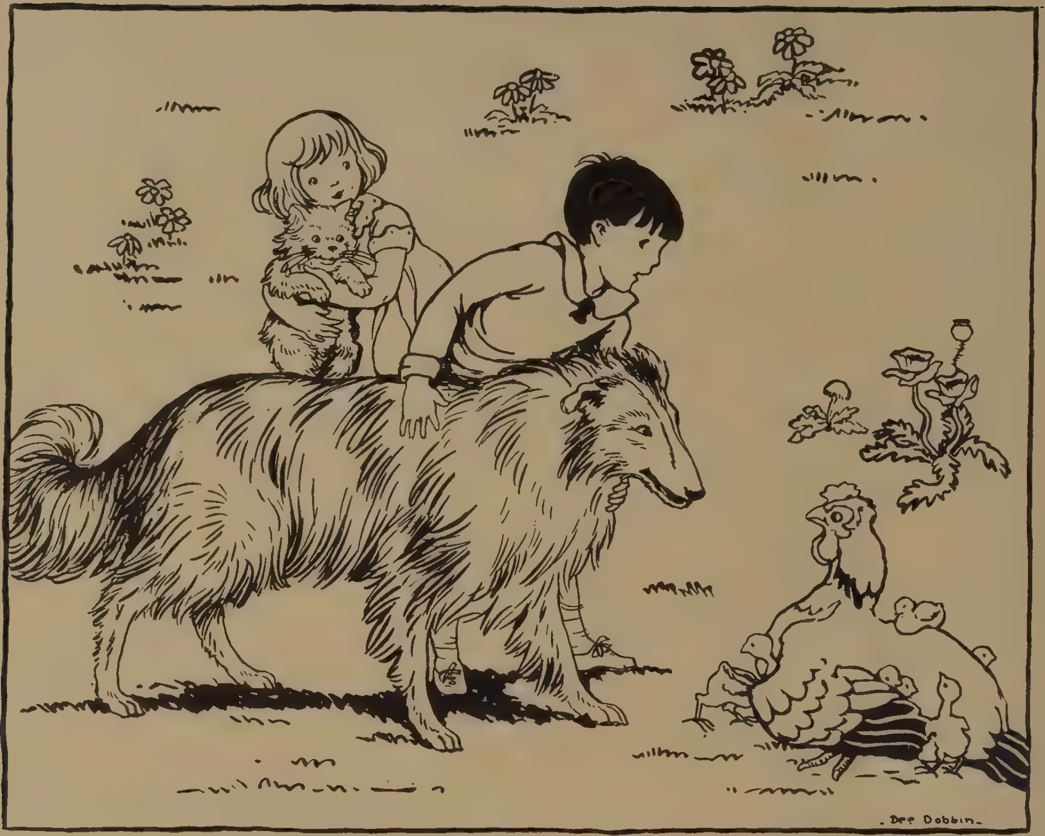
LESSON TWO—DOLLY—THE SHETLAND PONY

"Good morning, Peter and Polly.
Good morning, Dick and Laddie.
I am a little Shetland pony.
My name is Dolly.
I want to live with you.
I like you, Peter.
I like you, Polly.
I like you, Dick.
I like you, Laddie.
Do you like me?
I can run.
I can play.
May I live with you?
I want to play with you."
Peter runs to Dolly.
Polly runs to Dolly.
"O, Dolly," says Peter, "I like you."
"O, Dolly," says Polly, "I like you."
"Come, Laddie," says Peter.
Laddie runs to Peter.
"Come, Dick," says Polly.
Dick runs to Polly.
See Peter and Polly,
and Laddie, the collie,
and Dick, and Dolly!
Do you like them?



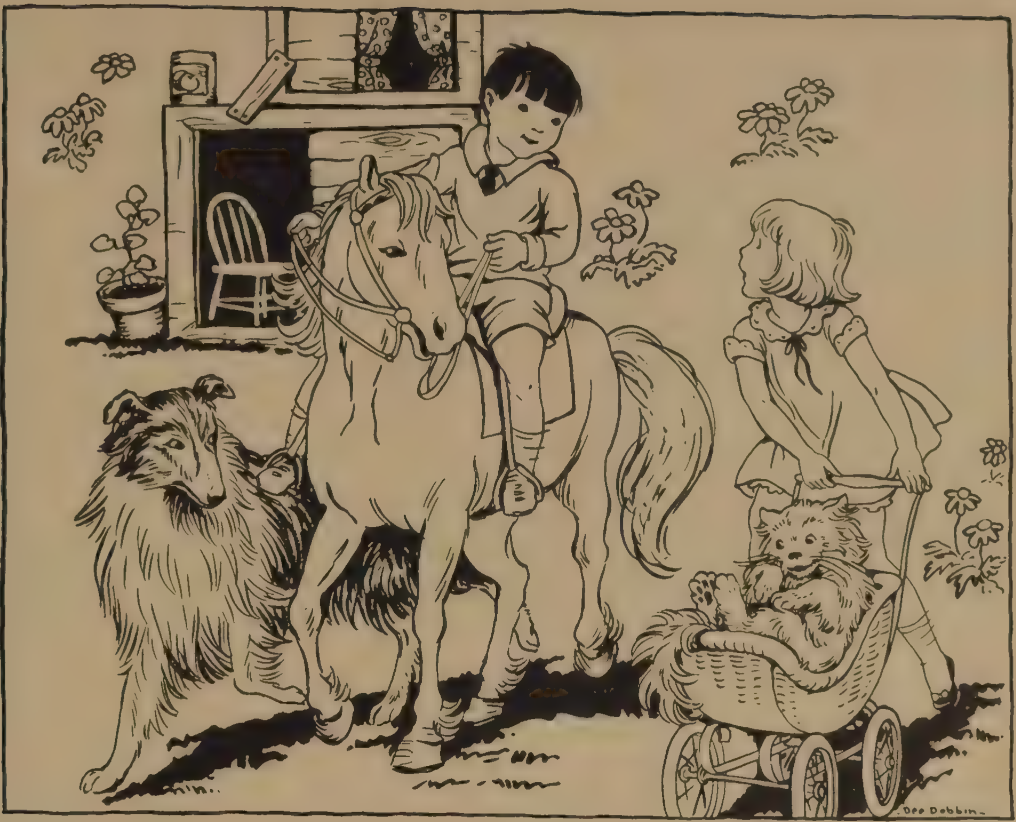
LESSON THREE—THE RIDE

Here is mother.
She has an apple for Dolly.
Dolly likes apples.
"Come, Dolly. Come, Dolly,"
says Mother.
"Come, Dolly. Come, Dolly,"
says Polly.
She has an apple for Dolly,
too.
Dolly comes to Polly.
"Oh, see," says Polly,
"Dolly comes to me.
Dolly likes me."
"Bow-wow-wow," barks
Laddie.
"May I ride Dolly, Mother?"
says Peter.
"Yes, Peter, you may."
Peter rides Dolly.
Dolly walks and walks.
"Bow-wow-wow," barks
Laddie.
Dolly runs.
"Whoa," says Peter. "Whoa,
Dolly, whoa."
Dolly stops. She likes Peter.
"Bow-wow," barks Laddie.
Dolly does not run.
"Good Dolly. Good Dolly,"
says Peter.



LESSON FOUR—THE LITTLE RED HEN

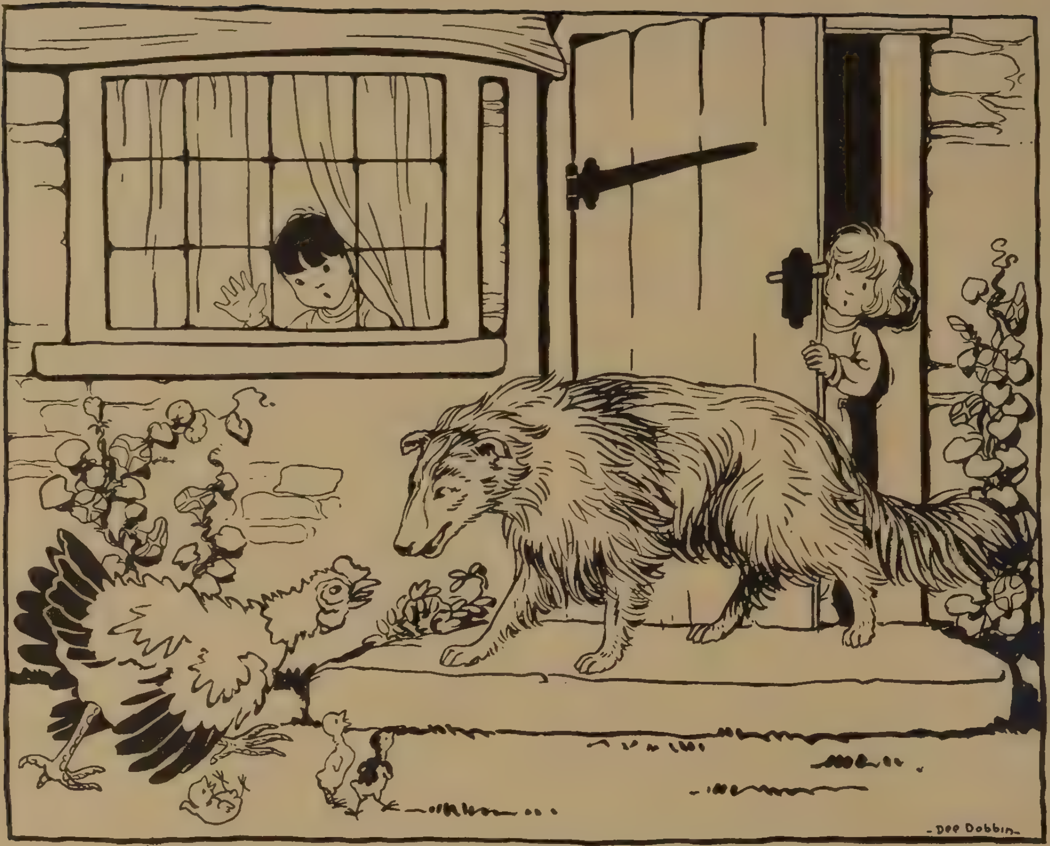
"Meow, meow, meow."
"Bow-wow-wow. Bow-wow-wow!"
Laddie, the collie, and Dick, the cat, see a hen.
The hen is Little Red Hen.
"Cluck, cluck, cluck," she says, "here are my chickens."
"Oh, look, look at the baby chickens," says Peter.
Peter runs to see them.
Polly runs to see them.
"Cluck, cluck," says the Little Red Hen to her babies. Come with me."
"O, Little Red Hen, I like your babies.
Come, chick, chick, chick," says Polly.
"Cluck, cluck, cluck," says Little Red Hen.
See the baby chickens run to her.
There are one, two, three, four, five, six.
"Bow-wow-wow," barks Laddie.
He wants to play with them
"Cluck, cluck, cluck," says Little Red Hen.



LESSON FIVE—PLAYING HOUSE

Peter and Polly are playing
house.
Peter is father.
Polly is mother.
Dick is the baby.
Dick wants a ride.
Polly takes Dick for a ride.
He is a good baby.
Laddie walks.
Peter rides Dolly.
See Peter, and Polly, and Dick,
and Dolly, and Laddie.
One, two, three, four, five.
Can you count them?

See the play house.
Peter and Polly made it.
Polly says, "Look, Peter,
my baby is asleep.
He is a good baby."
Polly goes to the play house
with Dick
Peter rides, and rides.
Laddie goes with Peter.
Here is Little Red Hen.
She comes to see Polly.
"Cluck, cluck, cluck," she
says.
"May I see your baby?"



LESSON SIX—SIX O'CLOCK IN THE MORNING

It is six o'clock.
Peter and Polly are asleep.
Laddie and Dolly are asleep.
Little Red Hen is not
asleep.
She comes to the house.
She comes with her baby
chickens.
"Cluck, cluck, cluck," she says,
"I am hungry."
She sees Laddie.
She pecks Laddie on his head.
"Bow-wow-wow," barks
Laddie.
Peter and Polly jump
out of bed.
"Bow-wow-wow," barks
Laddie.
Little Red Hen flies
at Laddie.
Laddie barks and barks
at Little Red Hen.
"Here, Laddie. Here,
Laddie," says Peter.
Laddie stops barking.
Peter and Polly come with
some corn.
"Cluck, cluck, cluck, cluck,"
says Little Red Hen.

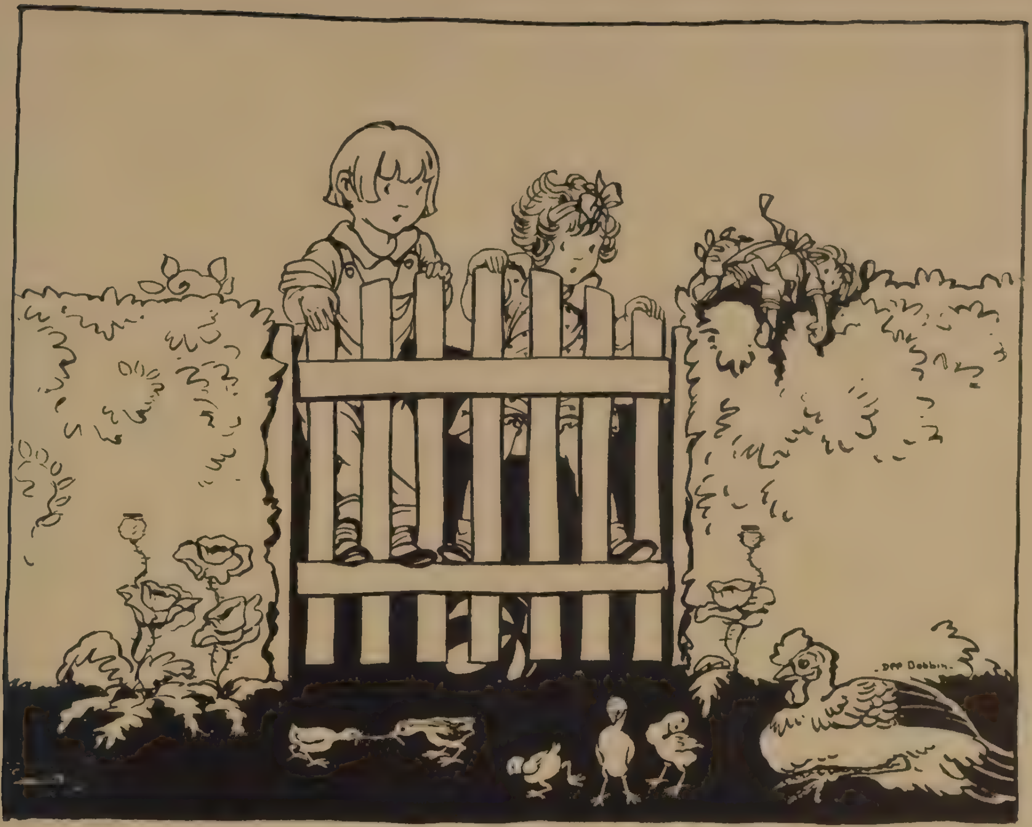
LESSON SEVEN—THE LETTERS

Father is not home.
Polly is writing to him.
Here is her letter:
"Dear Papa:
Dick is a good cat.
Little Red Hen has
six little chickens.
She pecked Laddie
on the head.
Peter and I like
our Shetland pony.
Her name is Dolly.
Your little girl,
Polly."

Peter is writing to Father.
Here is his letter:
"Dear Papa:
I ride Dolly.
She runs and runs.
Laddie barks at her.
Some little boys want
to ride Dolly, too.
Dolly likes apples.
Polly plays the cat
is a baby.
Please come home.
Your little boy,
Peter."

LESSON EIGHT—TIME FOR LUNCH

"Come, Dolly. Come, Dolly.
I have some corn for you.
Come, Little Red Hen, I have
some corn for you.
Come, kitty, kitty, kitty,
I have some milk for you.
Come, Laddie, I have a bone
for you.
I am hungry, too.
I want some bread and milk,"
says Polly.
"So do I," says Peter.
"I am hungry, too.
Please, give me some."
"I have good corn," says Dolly.
"I have good corn," says
Little Red Hen.
"I have good milk," says Dick.
"I have a good bone,"
says Laddie.
"I have good bread and milk,"
says Polly.
"I have good bread and milk,"
says Peter.
Mother comes out of the
big, big house.
She laughs and laughs.
"Is this a party?" she asks.



LESSON NINE—BETTY AND BOBBIE

Betty and Bobbie live near Polly.
They live in a little house.
They like to play with Peter and Polly.
Bobbie has a big ball.
Betty has a big doll.
They do not have a dog.
They do not have a cat.
They do not have a Shetland pony.
They do have a hen and five little chickens.
They like Laddie, the collie.
They like Dick and Dolly.
They like to ride Dolly.
Betty and Bobbie want to play with Peter and Polly.
Mother says, "No, no, play here."
You have a doll, Betty.
You have a ball, Bobbie.
So Bobbie plays with his ball.
And Betty plays with her doll.
"Oh, dear," says Betty, "I want Polly."
"Oh, dear," says Bobbie, "I want Peter."
They walk to the gate.
They look and look, but they can not see Peter and Polly.

LESSON TEN—THE PARTY

"Mother, may Peter and I have a party?"

"Yes, Polly, you may."

Peter and Polly write this letter:

"Dear Betty and Bobbie:
Please come to our party at two o'clock.
Peter and Polly."

Peter rides Dolly to Bobbie's house.

He gives Bobbie and Betty the letter.

"Oh, oh, a party," they say.

Here are Betty and Bobbie, and Peter and Polly, at the party.

They run. They play ball.

They play house.

They ride Dolly.

"Come, children," says Mother.

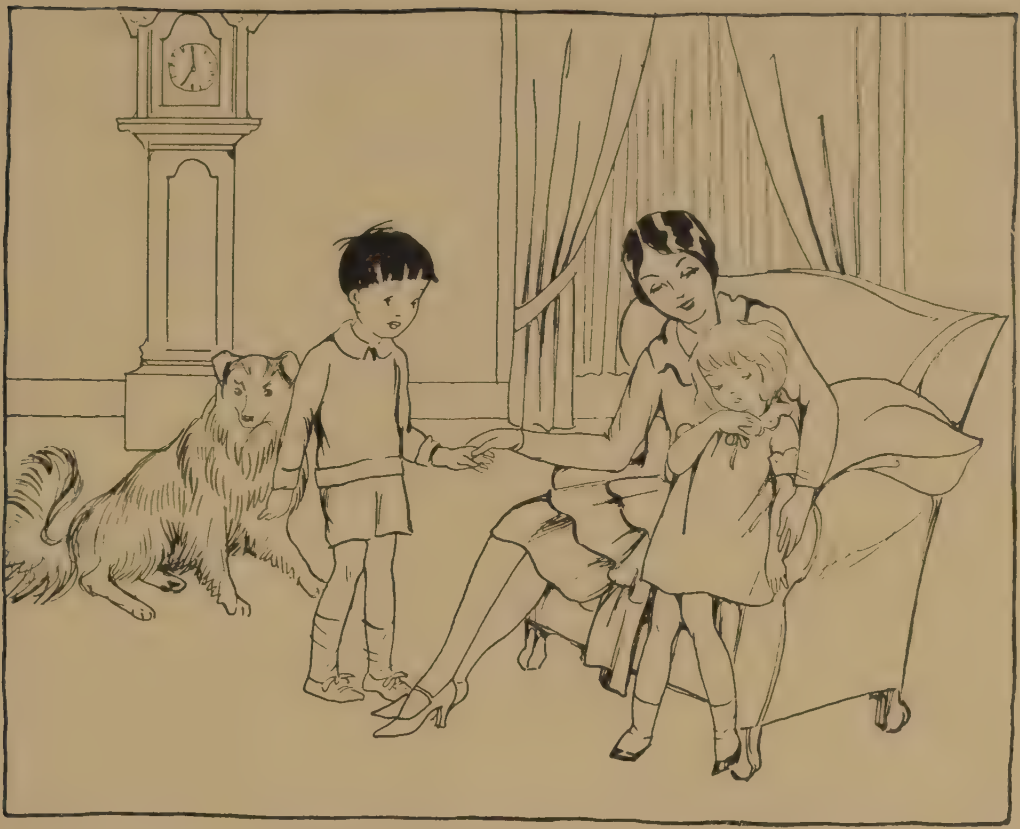
She has bread and butter for them.

She has good milk for them.

She has a big cake for them.

They eat in the play house.

They give Dolly, and Dick, and Laddie, and Little Red Hen, bread and cake, too.



LESSON ELEVEN—GOOD NIGHT

"One, two, three, four, five,"
says the clock.
Betty and Bobbie say good-bye to Peter and Polly.
"We had such a good time.
Good-bye, Laddie and Dick.
Good-bye, Little Red Hen.
Good-bye, Dolly."
Peter and Polly walk to the gate with Bobbie and Betty.
"Good-bye, good-bye,"
they say.
They had a good time, too.
They are tired from play.
Yes, very, very tired.

"One, two, three, four, five,
six, seven," says the clock.
Little Red Hen is fast asleep.
Dolly is tired from play.
Soon she will go to sleep.
Laddie is tired from play.
Soon he will go to sleep.
"Come, Polly. Come Peter,"
says Mother.
"You are tired from play."
"To bed, to bed," says the
clock.
So Peter goes to bed.
And Polly goes to bed.
"Good night, good night,
good night!"

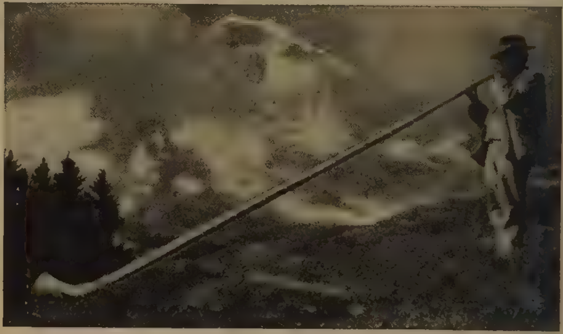
COMMUNICATION

Trumpets Are Still Being Made from Conch Shells

SUPPOSE you wished to send a message to a friend living in a distant city. How would you go about it to communicate with your friend? Can you imagine the world without the telephone, the radio, the telegraph, books, newspapers, or the mail? The entire world would be set back a hundred years or more if our modern ways of sending messages were taken away.

No one knows when people first began to communicate with each other. Of this, however, we may be certain: very early in the history of the world, man discovered that he had to find a way of calling for help in times of danger. In those far-off days the first villages were small and the shelters were built close together. Thus it was easy for anyone in need of help to call out loudly enough to be heard in all the dwelling places near by. As time went on, men increased in numbers and their villages increased in size. Then it was that men had to find other ways of calling people from a distance. We can only guess what these ways were. Perhaps a shepherd discovered that he could make a trumpet out of a ram's horn. Then again, there may have been a fisherman who found that, by blowing into a conch shell, he could make a sound that could be heard a long distance. Villagers hearing a blast from either of these horns knew that help was needed. Such sounds were probably the first danger signals.

In communicating or signaling we make use of one or more of our special senses. As you think of the methods you yourself use daily, you will see that most signals are carried by sight and sound. It is possible, however, to use the sense of touch, smell or taste. Helen Keller, blind and deaf from infancy, learned to know what was said to her by means of touch. Can you think of other ways of signaling your friends?



The Alphorn Calls Swiss Shepherds at Sunset

Sound Signals

Today we use many sound signals to communicate with one another. Did you ever think of the many ways bells carry messages?

The bell signals the arrival of the postman or a guest at the door. It also tells us that we are wanted on the telephone. Many people depend on the ringing of an alarm clock to waken them.

High in the Tower the Bell Tolls Out Its Message

On Sunday morning bells call us to worship. For over fourteen hundred years bells have called people to church. They have been rung to declare both war and peace. In times of great rejoicing or danger, bells have been very useful because their sounds could be heard far and wide.

Out of doors we hear many other kinds of bells. There are fire alarms, and chimes from tower clocks telling us the time. Fire engines carry gongs to warn people on foot and automobile drivers to keep out of the way. Railroad engineers ring the bells of their locomotives whenever they enter or leave a station. They also ring them when they approach a grade crossing and when they are shifting cars around a freight yard.

The Lighthouse Sends Warnings by Sight and Sound

In early colonial days, bells rang wildly whenever the settlement was attacked by Indians. This ringing told the men to hurry back from the woods or fields or wherever they were working, and also warned everyone to take shelter within the walls of the stockade or fort. In later colonial days, bells were used by the town criers. These men walked the streets calling out important news. Another sound signal used in early days was the curfew. The ringing of the curfew bell told all the people that it was time to be off the streets and home from the fields. In some parts of the world, even in our day, the curfew rings at nine o'clock. It is the signal for boys and girls who are less than fifteen years old to go to their homes.

Several kinds of bells are used on ships. At sea, time is told by the ringing of a big bell. The crew is divided into two watches, and the day is divided into seven watches. Five of the watches are four hours in length, and the remaining two, called dog watches, are each two hours in length. The ship's bell is struck each half hour starting with one bell and going up to eight bells. The strokes on the bells are always paired where possible; for example—

four bells: dong, dong—dong, dong
seven bells: dong, dong—dong, dong—dong, dong—dong.

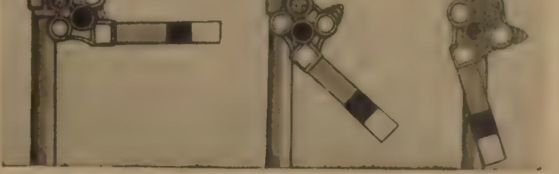
Primitive People Communicate with Signal Drums

At night, every time that the bell is struck, the lookout reports to the officer of the watch, "All's well, sir. Lights burning brightly."

The captain of a ship uses an electric gong to send signals to the engine room.

Bells are also used to guide ships sailing in a dense fog. Lighthouses and lightships often send fog warnings to ships, far out at sea, by means of submarine bells. These are hung below the surface of the water, and are rung by electricity. They are used because water carries the sound of a bell about ten times as far and four times as fast as air does. Bell buoys are placed near shores to warn ships of dangerous rocks and shallow waters.

One kind of communication heard many times a day is the whistle. Traffic policemen use whistles to stop and start traffic moving over our city streets. Boy Scouts and Girl Scouts use whistles to give their special signals.



The Railroad Semaphore Is a Mechanical Messenger

The Boy Scout Spells His Messages with Flags

Railroads and ships use many whistle signals. Have you ever noticed a long cord placed near the ceiling of a railroad passenger car? By pulling it the conductor is able to sound a signal in the engineer's cab. If the conductor pulls the cord twice, the engineer answers by blowing the steam whistle the same number of times. Two blasts coming from the locomotive's whistle, while the train is running, tell the hearer that the conductor has signaled the engineer to stop the train. Three blasts mean "Stop at the station"; four mean "Run slower"; and five, "Run faster." When the engineer wishes to warn people that his train is coming to a grade crossing, he whistles a signal that sounds like this: ——— ——— — —.

The Heliograph Flashes the Wireless Code

Ships approaching each other use whistles to tell the other what each is going to do. A single short blast means "I will keep to the right"; two short blasts mean "I will keep to the left." A ship must answer a signal by repeating it just as it was given by the first ship. In this way the second ship tells that it knows what the other is going to do. Ships have many other kinds of whistles by which they communicate with one another.

One of the oldest forms of sound communication is the signal drum. Signal drums are still being used by the natives of Africa, South America, and the South Sea Islands. The drums sometimes have frames of wood or bone, but more often they are hollowed-out logs which are set into the ground on a bed of moss. When they are struck with heavy sticks, the drums give off a deep, heavy tone that can be heard for many miles. They are called "telegraph drums," for messages are relayed from village to village in this way. Every village and tribe has its drum station and special drummers who send messages by the number and the length of drum beats. During the Zulu War the Germans found that information concerning their military movements were drummed over the entire Zulu region.

American Indians Communicated with Smoke Signals

Sight Signals

Whenever you move your hands or arms to catch the attention of another person you are using a sight signal. Waving the arms was probably the first sight signal used by early man when he wished to send a message across a river or a valley.

In our daily lives we see and use many sight signals, as, for example, the Stop-and-Go signs at street crossings. All road and street signs are safety signals. Study these signs. They show the automobile driver before he can read the words that he is coming to a winding road, a sharp turn, or a railroad crossing.

Sight signals are very important to railroad men. All along the tracks, railroads have sight signals which are known as safety signals. Many of them are operated by electricity. Have you ever noticed a tall post, set beside the track, with a paddle-shaped arm that can be moved into three different positions? Have you noticed, too, that there are three frames of colored glass in one end of the arm? One frame is red, one yellow, and one green. They are placed so that after dark a lamp shines through one or another, according to the way in which the arm is pointed.

Even Today Runners Carry Verbal Messages

This tall post with its arm is called a railroad semaphore. It is set beside the track to tell the engineer how to move his train. When the signal arm is in a slanting position, the engineer knows that he is to go ahead slowly and with great care. After dark the signal for this warning is a yellow light. When the arm is held straight out at the side, the engineer must stop his train. The night signal which means the same thing is a red light. Other railroad signals have no arms, but show lights day and night. It takes many trained men to keep all the railroad's signal lights in order.

A semaphore which is used in the navy and at Coast Guard stations has two arms. The different positions which these arms take represent the letters of the alphabet. Thus messages are spelled out by changing the positions of the semaphore. These semaphores have electric lights, so that messages may be sent at night as well as by day.

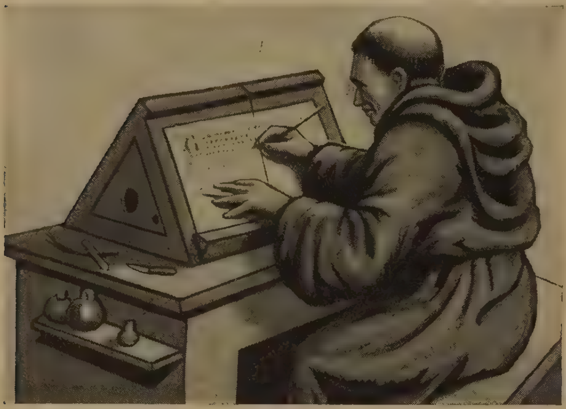
Have you ever seen a Boy Scout or a Girl Scout send messages by flag signals? Scouts who have learned these sight signals can tell any letter as far away as they can see the flags. Sailors also use this form of sight message to communicate with other ships. However, today the radio is the commonest means of sending messages between ships at sea, or between a ship and the shore. Why is it well for soldiers to know how to send messages with flag signals?

Ancient Man Left Pictured Records in Caves

Did you ever try to flash a message with a mirror? Fun, isn't it? In the long ago the Greeks sent light messages by flashing their polished shields in the sunlight. The Egyptians and Persians used mirrors as flash signals. This same plan is used to some degree in the heliograph. The heliograph uses mirrors to flash beams of sunlight for long distances. This is telegraphing by the sun's rays. Messages have been sent by army heliographs over two hundred miles.

Later, Messages Were Inscribed on Clay Tablets

When the first white men arrived in America, they found the Indians using smoke signals to send messages to friends at a distance. No one knows who first used this form of sight signaling. The Indians built their fires of damp grass or wet wood. This fuel made a thick smoke. The signal or smoke maker held a blanket over the fire. Then, after a moment, he would move away and let a puff of smoke rise into the air. The smoke was sent up into the air in long and short puffs. One smoke puff was the signal for attention. Three puffs meant that an enemy was near. The early Australians used several materials to make smoke of different colors.



In Medieval Times Records Were Kept in Manuscripts

Signal fires have been used by many people throughout the world. In some parts of England memorials have been built on the beacon hills where fires were burned to tell the country that the Spanish Armada was near the English coast.

Beacons today are different from those used in the days of the Spanish Armada. Our beacon lights are rotating electric searchlights. They are used to direct planes to landing fields or airports. There are airplane beacons that can be seen by aviators for one hundred miles. Since our planes carry mail and passengers by night as well as by day, these flashing lights have been placed every ten or fifteen miles apart to guide aviators.

Message Carriers

The story of sight signals is closely related to the story of transportation, for, to get the signals to work at distances from their origin, it becomes necessary to have a means of carrying them from one place to another.

Thousands and thousands of years ago, people could neither read nor write. Thus there was no need for mail carriers in those ancient days. Whatever did people do when they had to send an important message to some far-away village? They sent a messenger who would repeat word for word that which had been told to him. These men were called runners. Runners have been used as messengers in all parts of the world for centuries.

No one knows when or how writing began. Explorers have found crude drawings in caves that used to be the dwelling places of ancient men. Pictures showing these stories of the cave man's adventures could be seen, of course, only by people who came into the caves. As time went on, men found it necessary to send written messages to their neighbors. They, too, used pictures to show their thoughts. You may see an Indian picture letter on page 280, Volume 2, of "The Junior Instructor." You may read about picture writing in Longfellow's poem, *The Song of Hiawatha.* Thousands of years ago the Phoenicians, a seafaring people, gave us our alphabet. Centuries later, printing was invented. It brought books and newspapers to large numbers of people. To tell the full story of writing and printing would take many pages.

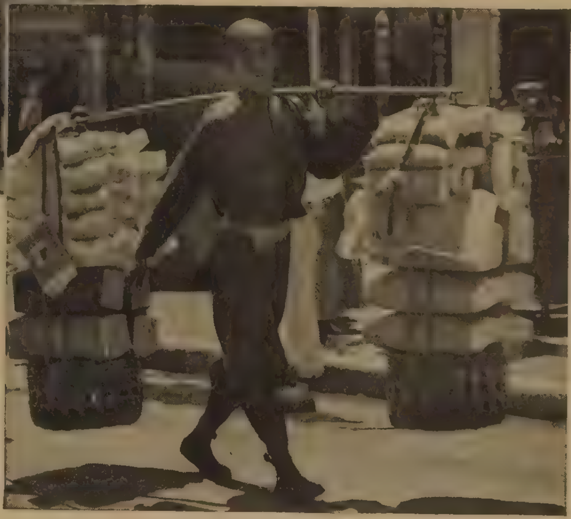
Printing Makes the Written Word Available to All

The Pony Express Was an Early American Carrier

For a long time after the invention of printing, there was no quick way of carrying written or printed messages long distances. It was not until the eighteenth century that the steam engine was invented, making travel on land and sea more rapid. After that, there was great progress. Discoveries in electricity gave us the telegraph and radio, and the gasoline engine brought the motorcar and the airplane. All these devices are used today to carry messages swiftly over continents and oceans. Our latest wonder is television.

When properly used, modern communication will bring international friendships and a world community of happy peoples.

TRANSPORTATION



Human Carriers of Today. Even Variations of the Sedan Chair Are Still in Use

MAN'S main business is getting a living. It has been his chief task since his beginning. In those beginning days he obtained his living directly from nature. He ate whatever happened "to be handy." When he had eaten himself out of a place he moved to another. Thus early man was ever on the move. His moving was very simple. He flung about his shoulders the skin that was his clothing, seized his club, called to his mate and his children and set forth. Some of his moves were not good ones. Often he found himself in a country of meager food supplies. Little food meant great pangs of hunger. After a number of such experiences he began carrying food from one place to another.

As he carried things he began to think of ways of making his carrying easier. Out of his thinking he invented devices that would leave his hands and arms free. So he "toted" loads on his head. Thus, head pads and head bands came into use.

The longer man continued to transport goods by his own power the more thought he gave to finding methods by which to relieve the load. He strapped packs on his back. He tied a load to one end of a pole strung over his shoulder while he held the other end of the pole in his hand. Still another step was his discovery that ease in transporting could be obtained by suspending a load from a pole carried on the shoulders of two men, walking one ahead of the other.

Very early, too, another element was introduced into the problem of transportation. This was barter, or trading of goods for goods. Barter is the oldest and simplest kind of trade. When some lucky man of the very early days killed two beasts, he traded one for his neighbor's extra stone-headed club. Perhaps, too, some hunter learned that men along the rivers were catching fish, and so they traded meat for fish. As time went on and men traded more and more, the clever trader became wealthy and powerful. Attaining success, he was transported by those not so successful. Thus came into existence the litter and the palanquin. With wealth, man demanded comfort. His palanquin was enclosed, padded and hung with rich furnishings and carried by means of poles on the shoulders of his servants.

Man ventured far in his trade. He was ever on a westward march, which in time led him to Greece and Rome. Here he introduced the litter where it became a popular form of conveyance. Later England, France, and other European countries adopted it. During the Middle Ages, it was extensively used. It was borne by horses, one at either end. France adopted the sedan chair version of the litter after French travelers had seen it in use in China.

Even today white people traveling in tropical countries are sometimes carried in a sort of hammock slung from a pole which is carried by natives.

Also today other man-powered forms of transportation, such as the jinrikisha of Japan and other sections of Asia, the one-wheeled cart of China, and the wheelbarrow are still in use.

In the early days of his progress man learned to tame animals and later to train them to carry his burdens. From that day to this animals have been used to transport man and his goods.

Beasts of Burden from Far Lands

If one could sit in an all-seeing position what a motley array of burden-bearing animals he would see moving on the surface of the earth. In the parade there would be the elephants of India, the water buffaloes of the Philippines, Siam and other Asiatic countries, the camels of Arabia and Egypt, the asses and donkeys of Palestine, Sicily and other Mediterranean countries, the shaggy ponies of Mongolia, the llamas of the Andean countries, the dogs of Alaska and Belgium, the reindeer of Lapland, slow-moving oxen, stout mountain ponies, mules, and of course horses of many breeds. However, it is only during the past few centuries that the horse has been man's chief beast of burden.

The amount which can be piled on any animal is limited and man soon discovered that his burden bearers could pull more than they could carry upon their backs. Sleds and sledges were fashioned and attached to the animals with rude harnesses. It is interesting to note that when one man conceives an idea, he sets into motion the thoughts of others for its development and improvement. The first sleds and sledges went through a series of changes to facilitate comfort and speed in transporting man and his goods. By the 18th century the runners of American sleds were banded with iron bands. Man had started on his quest for speed. However, it is equally interesting to note that in an age of speed and specialized forms of transportation there are regions on the earth where man still uses the sled and the sledge to take him from one place to another (See Eskimos and Lapps).

The discovery that it is easier to roll a burden than to drag it was man's first step toward the conquest of the land surfaces of the world. Who made the first wheels? We do not know. Probably man first found that a heavy object could be rolled along on logs. An early method was a contrivance of a series of logs on which objects were moved with the aid of a lever. The pyramid builders moved the huge stones they used in this manner. Then man discovered that the entire roller did not need to be used. So he hacked away the center, leaving the log spool-shaped, the axle and the wheel all in one piece. From these beginnings man gradually learned to make wheels with spokes and a hub, to form strips of wood for the rim, and later to reinforce the rim with iron. Each thought that produced more speed and efficiency was an incentive for the production of a finer wheel, so came metal wheels, rubber-tired wheels, and all the many types that are used today on automobiles, bicycles, railroad cars, farm implements, and carriages.

Man has used the two-wheeled cart for ages. The jaunting cart of Ireland, the jinrikisha of Japan, the milk cart of Belgium, and the donkey passenger cart of Cairo are but a few of the many forms in which it is in use today.

Two-wheeled carts could not follow the narrow trails over which man and animal had managed to make their way. Paths had to be cleared and

Evolution of the Wheel From Ox Cart to Stage Coach

widened into roads. Since that time road-building and improved methods of travel have reacted upon each other. Each improvement in a road has been a challenge for more speed in travel, and each increase in travel has necessitated further improvements in roads. However, most of the early roads were one-purpose roads. The Greeks built them as a means of reaching the sacred places, while the Romans built them mainly for military purposes. The Romans were the most famous road builders of the ancient world. They built for the ages; and parts of some of their roads are now in use just as they were built. The best known of these roads is the Appian Way.

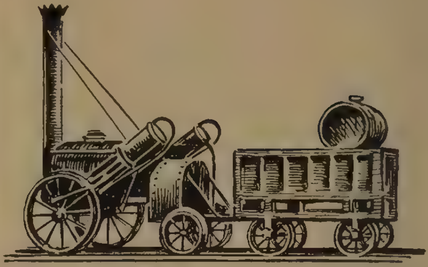
With the coming of the Middle Ages, man fell into dark ways. He discouraged competition, for he could see no reason for hurry and rivalry in a world that was soon to witness a Judgment Day. Transportation almost ceased. Roads fell into disuse and finally into ruin. However, the day came when the Turks took the Holy Land, and interfered with the trade from east to west. Then it was that man went Crusading. This pursuit led him to far places. When he returned to his home he carried with him treasures from the lands he had seen. Others liked his choices and gaped at the descriptions of what he had witnessed. Out of these desires he traded more and more.

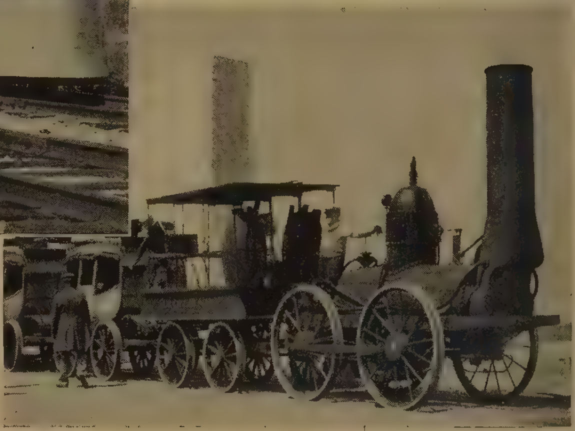
As countries grew and trade increased, man demanded better roads and better vehicles. Two-wheeled carts continued in use but the distances were so great that vehicles with four wheels were built to supplant the carts. However, it was not until the seventeenth century that four-wheeled carriages appeared in any great numbers.

Of the many four-wheel vehicles which have been in use, the Conestoga wagon is truly an American product. It was built for long journeys over rough roads to carry man's household necessities or to transport loads of merchandise. It came into existence as the result of "soft soil, trade requirements, migration, and native wit."

Man created the stage coach and stage coach service to carry him and his goods over long distances. As he bumped over the roads he faced discomforts and dangers. Each one he had to endure gave him another thought for its removal. Thus he built better roads, which included the building of bridges and ferries, and better vehicles. He was on his way to the day when he need no longer depend upon human muscle and the strength of animals to give him speed, distance, and comfort. That day came with his invention of the railroad.

The first man who succeeded in propelling a vehicle by steam power was Cugnot in 1769. His invention traveled on ordinary roads at a rate of three or four miles an hour, and had to stop every few minutes to get up steam. His machine was not a success but it did prove that vehicles could be propelled by steam. Man experimented for years on this theory, and finally the first successful locomotive to run on rails was invented by George Stephenson, an Englishman, in 1829.





The Iron Horse and the Automobile

The first practical railroad in the United States was built in 1831, and the first transcontinental railroad was finished in 1869.

The first jerking little trains were very unlike the rushing cross-country monsters of today, but they marked the beginning of man's ability to find an answer for his need for greater speed, greater comfort, greater safety, greater service, and cheaper methods of transportation.

Another of man's epoch making creations in the story of transportation was the automobile. At first he used it for his pleasure. Today, the automobile is a necessity in the business life of every civilized country. One of its far-reaching results has been the improvement of roads. It has been a force in bringing the world to man, and taking man out into the world.

A long time before the beginnings of history lived the first sailor. Who he was, we do not know. Where he was when he discovered that he could cross a body of water by sitting astride a floating log, we cannot even guess. Undoubtedly, there were many first sailors who each made the discovery in his own way and in his own place. However, this discovery did not allow him to carry his belongings with him. Not satisfied with this beginning he experimented until in time he learned to bend together logs or reeds and to make rude rafts on which he could carry himself and some of his goods. Then he learned to propel the raft by thrusting poles to the bottoms of the lakes and rivers on which he floated. Out of his experiences with the thrusting pole he created paddles.

It was probably later that man hollowed a log with fire and crude stone tools and made himself a heavy canoe. The dug out canoe enabled man to travel faster but it cut down the size of his load, and so he was faced with the problem of producing a boat that could carry heavy loads and at the same time could be easily propelled through the water.

Man's attempts to combine the useful characteristics of the raft and those of the dugout have resulted in the many kinds of boats that we have today.

For thousands of years man contented himself with propelling his boat by hand, but by the time Ulysses started on his journey to Troy, both sail and the oar were in use. However, the origin of the sail is lost in the maze of prehistoric days. Perhaps, man in one of his moments of relaxation discovered that by holding a skin on his paddle or on his staff, he could sit back in comparative ease while the wind did his work for him. Be that as it may sails did not gain a prominent place in the world of ships until the time of the Crusades. The earliest sails of which there is definite record are shown on carvings of ships on ancient Egyptian temples.

The galleys used in the time of the Romans were driven through the water by huge oars manned by slaves. Rome during her supremacy controlled every sea within her reach. Perhaps her ships

Water Transportation by Paddle, Sail and Steam

in their journeys to Britain gave to the Viking the idea of the sail. Rome needed boats to carry men, to carry grain, and to carry other cargoes. So trade and a desire for world expansion brought forth man's efforts in shipbuilding.

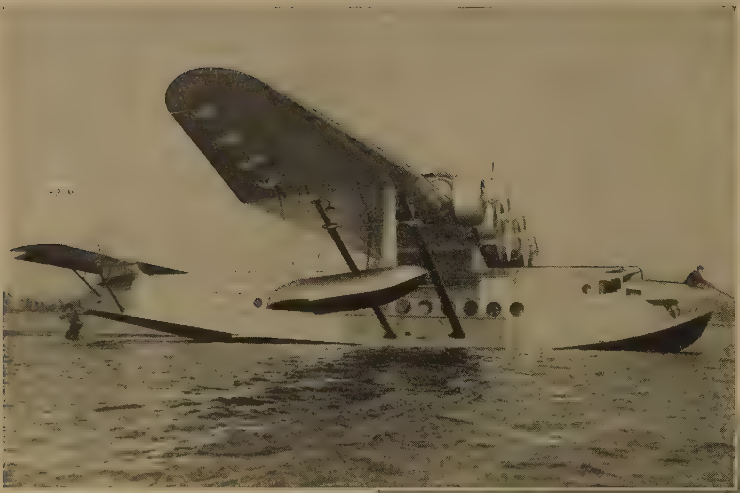
Then came the Dark Ages and man ceased his inventive characteristics to indulge in retrospection and dire forebodings for the future. Came the day of the Crusades and man once more made the Mediterranean a busy center of trade. Once man had broken through the bonds of his narrow medieval limitations he had to have more room for wandering. That was the time of the great voyages of discovery. Voyages meant that man must be a navigator. He achieved this, and we must pause to admire his courage and his pluck for his ships were leaky and their rigging clumsy. He guided his ship "by God and by guess". If he were lucky, in due time he returned, if not, he was counted as another lost. Life was a glorious adventure as he searched for a comfortable and safe road to China and Japan. One man in his search for that passageway was to find a new land. He was Christopher Columbus. The popular ship of that time was the caravel. A new day in transportation had arrived. The time had come for man to transport himself and his belongings to settle in a strange land. As he lived in this new land he learned from the Indians to make new canoes from birch bark. He relived the story of the development of ships —but he went farther for he had newer desires and greater demands.

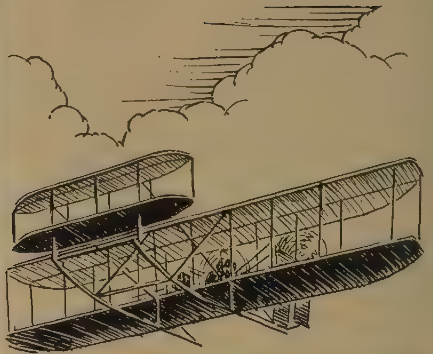
Thus the sailboat from its small beginnings went through a long period of development, and many picturesque types sailed the seas, including the dragon prowed Viking ship, the Elizabethan galleon, the caravel of Columbus, and the perfection of all sailboats—the clipper.

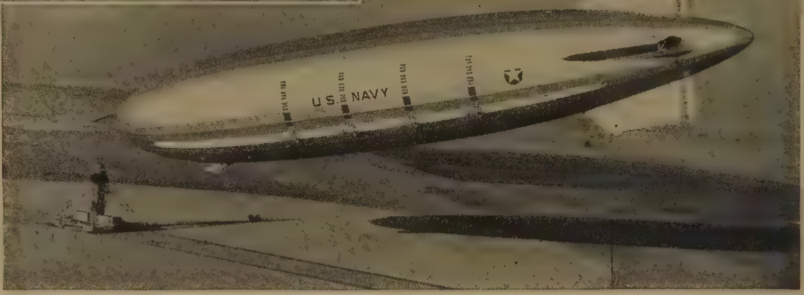
Man made many attempts to build a boat to be propelled by steam. The honor of the construction of the first practical steamboat goes to Robert Fulton in the creation of his boat called the Clermont. The early steamships were propelled by paddle wheels of a type generally used on inland waters today. The first boat to use the screw propeller was the Robert F. Stockton in 1839. Since that time the screw propeller has entirely replaced the paddle on ocean liners and many lake boats. The fuel engine and the electric motor are used in lake and river transport boats.

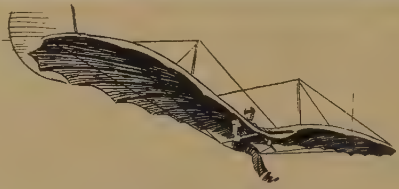
Today man has for his use in transporting himself to other lands, the great ocean liner—a floating palace of speed, safety, and luxurious comfort.

Time was when man's interests lay entirely in his home, but that time is no longer. Man produces an infinite number of products that cannot be consumed at home. He has stepped into the field of foreign commerce. He must maintain great fleets of ships that can carry his products to other lands and return with those vital cargoes which make for the comfort and happiness of himself and his fellowmen.









Man Learns to Fly
Mongolfier brothers, left; Lillienthal's glider, above; the Wright brothers, upper right.

Perhaps as far back as the time when man first took note of the flight of a bird he has had the desire to find a way that would carry him through the air. As far back as the Middle Ages he began to wonder if there was not some material which could float in the air as did a ship upon the water. It was not until 1783 that the first balloon was invented. The Montgolfier brothers of France had watched the clouds float in the air, and had conceived the idea of floating a bag with a cloud of smoke. They carried the thought into action and to their satisfaction the bag ascended. Next they fastened a basket to the bag and sent up live animals in it. Bag and animals returned to earth. Then Pilatrude Rozier volunteered to ride up into the skies. On his first ascent the balloon was held by ropes, but in November 1783 Rozier and the Marquis d' Arlandes ascended in a free balloon and remained in the air for twenty-five minutes. Hydrogen soon came to be used in place of the heated air used by the Montgolfiers. Such was the beginning of man's efforts. Today we have huge dirigible balloons that can be guided, can remain in the air for many hours, and can transport tons of goods.

While man was experimenting with balloons, he was still trying to develop a flying machine that was heavier than air and could be driven at a high speed. Man experimented until the day came when the first practical airplane was invented by the Wright Brothers of Dayton, Ohio. This was in 1903. Man has progressed rapidly in his air-flying endeavors. He is ever in conference with himself to out-distance his last creation. His record flights of today are the commonplace of tomorrow. He knows that the real significance of air transportation lies in what it promises to be in the future.

Transportation has played a tremendous role in the drama of man. It has permitted him to exchange raw and manufactured products and to travel. Travel has resulted in the exploration, the colonization and development of new lands, and in a general mingling of the earth's population. Communities are made up of people from various countries of the world. The members of a community are constantly traveling from one place to another bringing back new thoughts and ways of doing things. Transportation has thus enabled one part of the world to know what the other part is doing and thinking, and has assisted in no small way in the long trail which leads from primitive life to civilization.

Work and Play with Numbers

What to Learn about Numbers in Two Years

THE CHILD of five, six or seven years is interested in everything around him, likes to handle and play with everything he sees, and can be taught the science of numbers as a part of his daily play with very little difficulty. Throughout this chapter, it is to be understood that the precise nature of the objects employed is largely immaterial. A dozen pebbles from the brook, or buttons from the work-box, or beads, or apples, pears or potatoes from the kitchen, are equally good objects on which to allow the child to exercise his new accomplishment of counting, as soon as he has it fairly well learned.

The first step of all is to teach the child to count from one to ten. To do this, hold one object of the kind selected in front of the child and ask: "Do you know how many pebbles (or buttons, or beads) I have here?" The child should know *what* it is, before beginning to count that class of objects. If the child replies "One" do not look surprised, but say "Good! *Now* tell me how many I have." (Picking up two objects.) If the child does not know, tell him simply, "Here are two pebbles." Have the child repeat after you, and then let him say it independently. Drill several times on one and two, then go on to three in the same way. In like manner take up each number up to ten, showing the objects, and requiring the number of them to be given. Be careful to get clear and correct statements each time. The child will learn much of correct speaking during this drill.

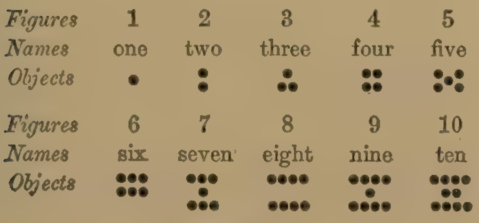


Diagram I

When this is done, the child may learn to count by two's, as, 2, 4, 6, 8, 10; with the objects first, in order that he may count each group if necessary. To do this, it is best to arrange the ten objects in five groups and then point from group to group.

When that is done, the child may see Diagram I.

After seeing that the little dots are just the same in idea as the pebbles or buttons that were used before, let him notice the figure "1" and the word "one" over the single dot. Tell him that the first is the figure and the other is the name. In like manner teach the other figures and names, and drill until the child recognizes them quickly. Then the child may be taught to make the figures and to write the names, from copy set by the mother.

The child is now ready to begin with different objects. The simplest and easiest to furnish are what are called splints. They are little sticks, match shaped, which may be counted until the number is perhaps twenty. Many different objects should be used besides splints and money counting exercises can be devised from the daily activities of the child.

So far, little emphasis will be placed upon the larger numbers, but as they develop logically from the simpler combinations they may be taught whenever the child is ready for them, keeping in mind these cautions:

1. Do not fail to drill thoroughly on the numbers from one to ten and then from ten to twenty, before teaching the numbers from twenty to fifty.

2. Let the larger numbers come in answer to natural curiosity in the child, induced by his knowledge of the smaller numbers.

3. Go slowly, but do not harp on a familiar thing after interest and curiosity over that particular thing have faded. If you do, you will give the child a distaste for numbers. It is better to let numbers alone for a while.

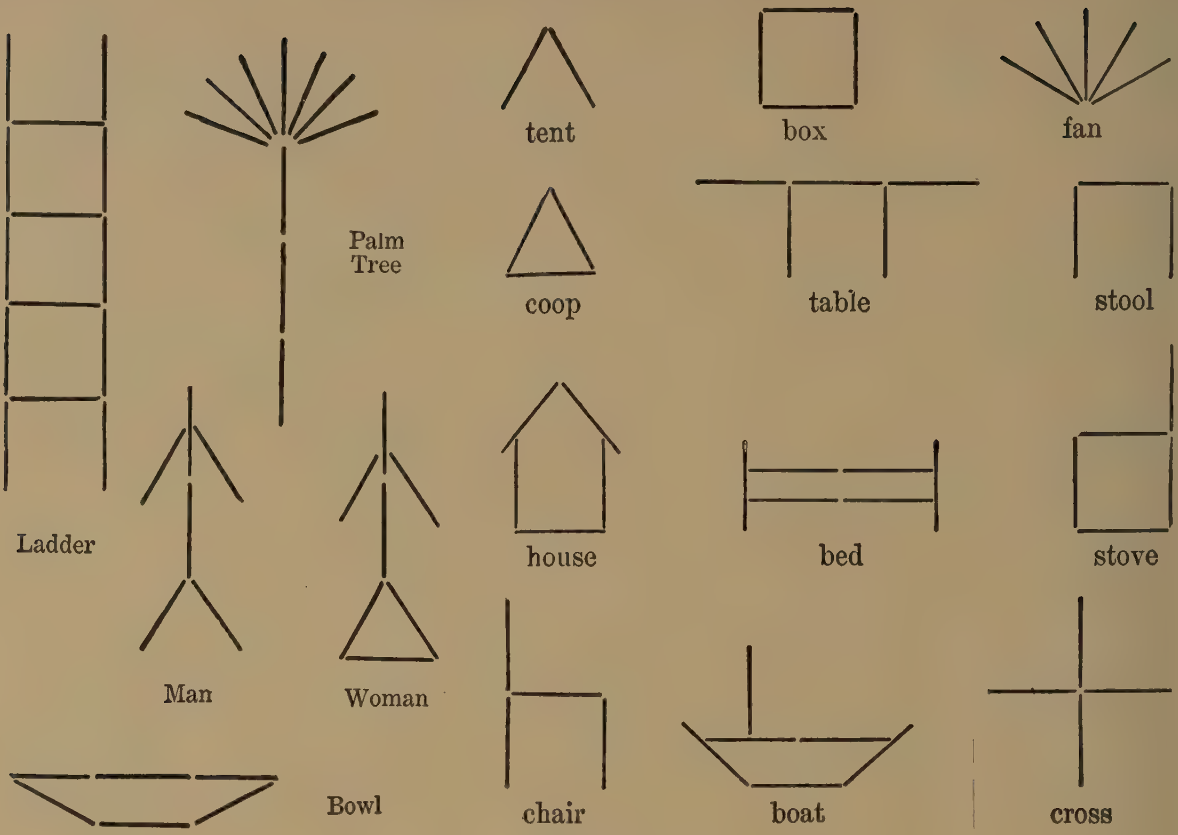


Diagram II

In Diagram II we have a variation of the counting game, with splints, which will prove interesting. Build all the objects shown in the pictures, name them, learn to write the names (if desired) and count the number of splints required in each object. The child will be fascinated with the task of building some additional designs.

A box of dominoes is an almost endless source of material for numbers. In learning to add with pebbles or beads or buttons and with the splints, a very pleasant variation can be secured with a set of dominoes, as is shown below.

The child may point to dominoes selected from those shown in Diagram III in order, and say:

> "One and one are two."
> "Two and one are three."
> "Three and one are four."
> "Two and two are four," etc.

After the child has the idea of number, introduce the character of "zero" or "naught", and let the child see that it really means "none".

Then with a regular set of dominoes, if such is available, the lessons can be varied. The dominoes can be placed face down; the child may draw one at a time. If he can read it and add the numbers correctly, he keeps it. If not, take it from him. Let him see how many he will have at the end of the game. If there are two or more children it may take the form of a contest.

The sign of addition may be called "and" at first, but when examples are written, the child must be told that the sign itself is called "plus" and means "putting together."

The next step is subtraction. If one and one are two, then two less one is one. That once seen clearly, either with the domino spots or with the splints, it will be time to take up the facts in Diagram V. Here the sign "minus" may be taught, as the child reads or writes the new game, (for all of this, to be effective, must be more or less casual, with the play element strongly developed) in the same way as "plus" was taught.

Drill on the combinations until the child is familiar at sight with the facts, and can read and write them fairly well. Then the familiar game of dominoes can be taught, and the children left to practice their numbers in a practical manner, which will show them the utility and the need of more knowledge.

The next material that can be used is a set of cubes, or blocks. Most children possess them, at one time or another, and all children like to play with them. A direction of that play toward

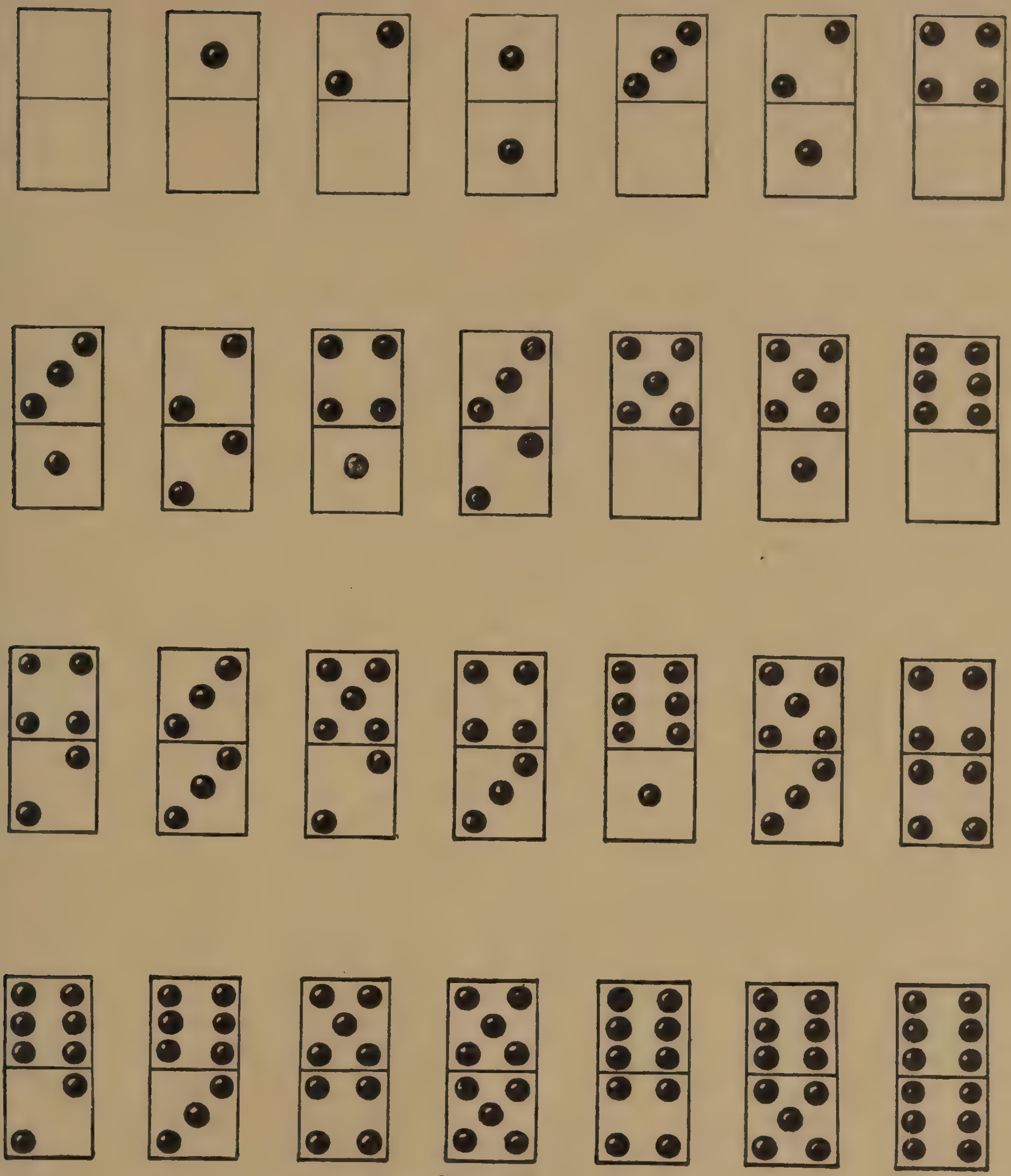


Diagram III

definite number facts will be easy if handled correctly. First let the child build a set of steps with the blocks, as in Diagram V. If he has no blocks, show him the picture. Then ask him the questions in the "Addition Lesson" on page 319, or read it to him as a story, if he has no blocks. When he can answer the questions (which should be easy to do if the previous work has been understood) begin on Diagram V. Say to him;

"In the first picture there are how many blocks in the first step?"

"There are two blocks in the first step."

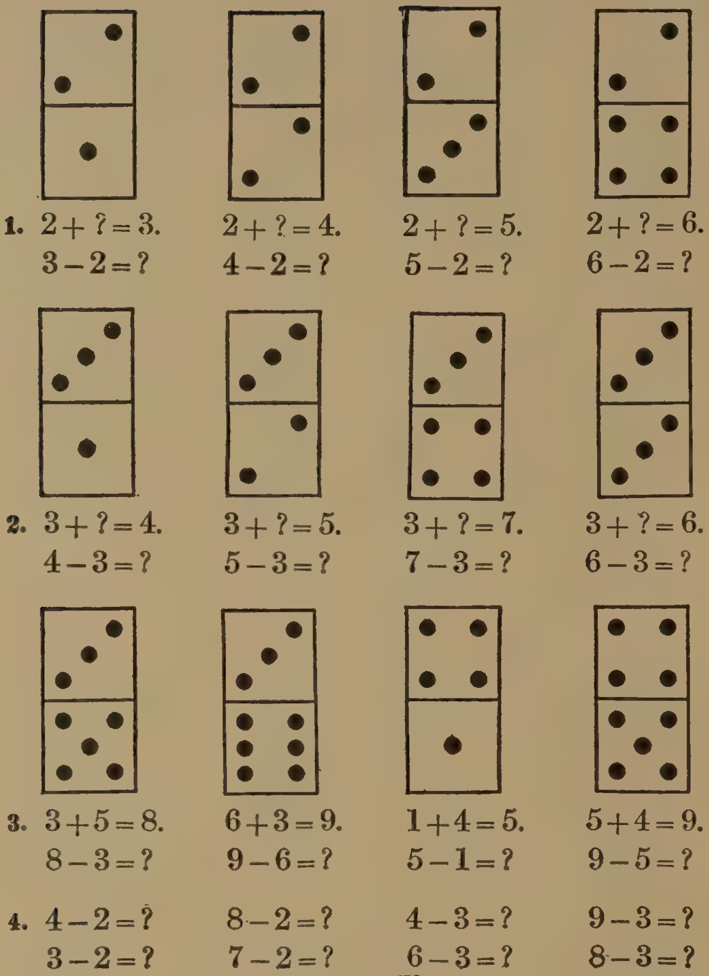
"If I call each 1, how many 1's will that be?"

"It will be two 1's," etc.

"In the second picture of the steps, if I call each 2, how many 2's will that be?"

"It will be two 2's."

"How many 1's will it be?"



1.	$2+?=3.$ $3-2=?$	$2+?=4.$ $4-2=?$	$2+?=5.$ $5-2=?$	$2+?=6.$ $6-2=?$
2.	$3+?=4.$ $4-3=?$	$3+?=5.$ $5-3=?$	$3+?=7.$ $7-3=?$	$3+?=6.$ $6-3=?$
3.	$3+5=8.$ $8-3=?$	$6+3=9.$ $9-6=?$	$1+4=5.$ $5-1=?$	$5+4=9.$ $9-5=?$
4.	$4-2=?$ $3-2=?$	$8-2=?$ $7-2=?$	$4-3=?$ $6-3=?$	$9-3=?$ $8-3=?$

Diagram IV

"It will be four ones."

"Then two 2's are how many ones?"

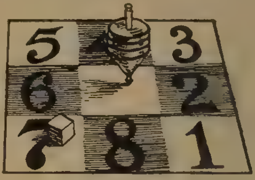
"Two 2's are four ones." (Or simply *four.*)

In like manner teach the second step, with three 2's, and the third step with four 2's.

Then take the 3's and 4's.

In case the child has trouble in sensing that two 2's are four, revert to the splints and let him make bundles of 2's, which he may count whenever he cannot compute the answer. The gap between addition and multiplication will be easily bridged. As soon as he can answer correctly all columns containing 2's, 3's, 4's, and 5's, teach him to say two 2's are four, three 2's are six, and so on, to ten 2's are twenty. In case of doubt, have reference always to the splints, and let him figure it out alone so far as possible. The tables of 3's, 4's, and 5's will then be practiced in the same way.

The blocks may be used to build as well as to count with, as shown in Diagram VI. In the same manner as with the splints, name each object, write the name of it, and let the child copy the writing. The writing of the real name of the real things he has made himself will prove a fascinating process, far different from the *a b, ab's* of formal penmanship.

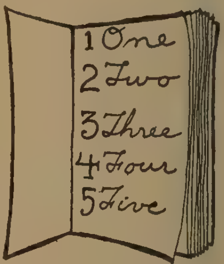


An entertaining game may be made from an old checkerboard, a top and a cube. Fit the board up with numbers cut from an old calendar; a light wooden cube, or a die, may easily be obtained.

The top is made to spin in the middle of the square. A cube is dropped on the top, which throws it upon some square. The number on the square tells how much it counts. Thus, if the cube falls on the square 4 the first time and on 3 the next time, the total count is 7. Take turns and keep score.

If carefully done, and not overdone or made laborious, a number book will be not only a record of work done, but a record of progress both in writing and in figuring.

Take four sheets of paper for the inside of the number book and one sheet of heavier paper for the cover. Put the short edges of each sheet together and crease through the middle. Open the sheets and place them one upon another, putting the heavier sheet of paper on the outside. Tie the sheets together with string or ribbon. Cut the figures from an old calendar. Paste the figures from one to five in the book as in the picture. As you learn new figures, paste them in the book. After each figure write its name as in the picture.



Let the child paste into the book the figures which represent the operations in Diagram II, and Diagram IV. Later he will learn to write them.

When it is filled, the book may be neatly labeled and put away.

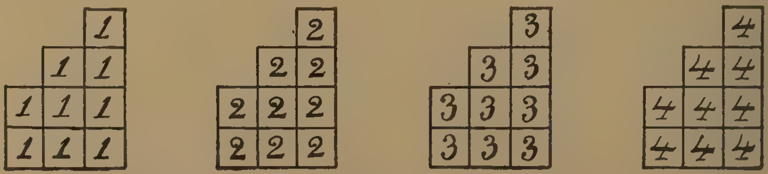


Diagram V

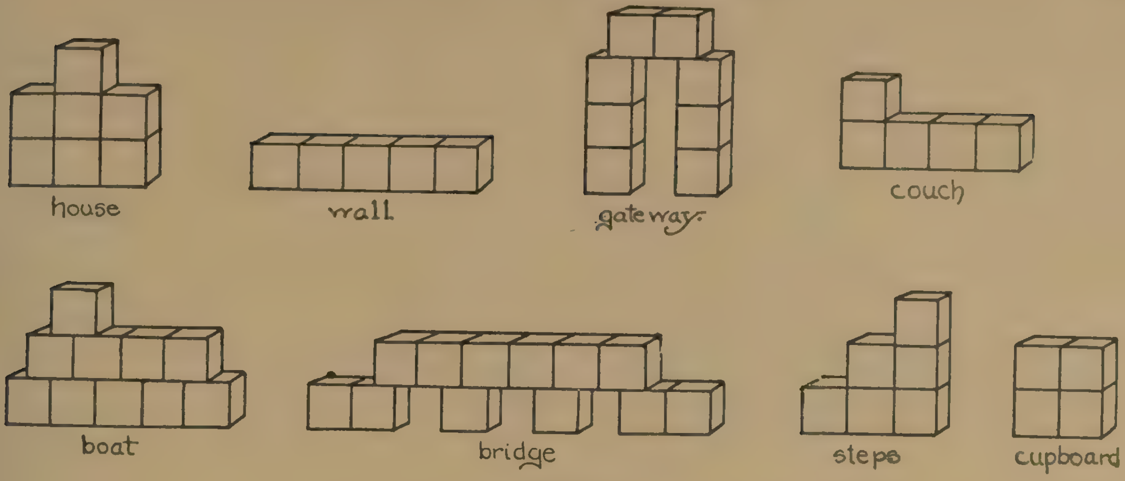


Diagram VI

A box of toy money is the next object to be introduced, and opens up an endless vista of employment, entertainment and instruction. The first coins to be learned are the cent, the nickel and the dime. Show the toy money and then compare with the real coins. If the child asks, he may be told the difference between "real" and "toy" money. He will probably want to know what real money is made of. If he does, tell him. If he doesn't, do not urge the question. Looking at Diagram VII, compute:

Five cents make a——.

How many cents in change will you get from a nickel after paying for a one cent stamp?

How many cents in change will you get from a nickel after paying for a two cent stamp?

How much change will you get from a nickel after paying for 3 one cent stamps?

How much change will you get from a nickel after paying for 2 two cent stamps?

Will you get any change from a nickel after you have paid for 3 one cent stamps and 1 two cent stamp?

How many one cent postcards can you buy for a nickel?

There are —— cents in one dime.

Count the two cents in a dime.

—— two cents make 10 cents.

Count the five cents in one dime.

—— five cents make 10 cents.

How many one cent stamps can you buy for a dime?

How many two cent stamps can you buy for a dime?

How many 5 cent pencils can you buy for a dime?

A nickel and one cent make —— cents.

A nickel and two cents make —— cents.

A nickel and three cents make —— cents.

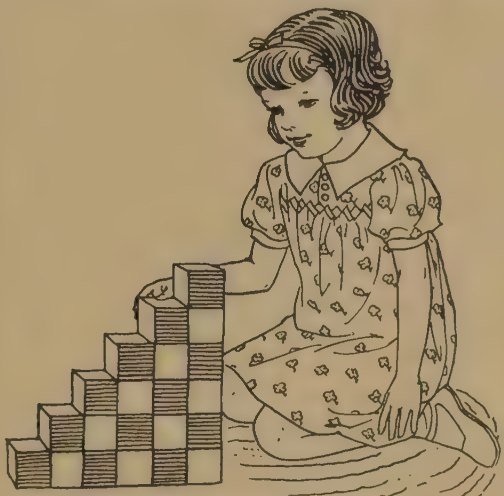
A nickel and four cents make —— cents.

Two nickels make —— dime.

Two dimes make —— cents.

Two dimes and a nickel make a ——.

Continue in this vein with the quarter-dollar and the half-dollar.



ADDITION LESSONS WITH CUBES

1. Mary arranged some cubes so as to make a set of steps like that in the picture. How many cubes did she use for the bottom step?
2. How many cubes did she use to build the second step?
3. How many cubes did she use for the first two steps?
4. How many did she use to build the third step?
5. How many did she use for the second and third steps together?
6. How many did she use altogether for the first, second, and third steps?
7. How many cubes did she use for the fourth step?
8. How many cubes are there in the four steps?
9. How many cubes more were used for the bottom step than for the second?
10. How many cubes were used for all the steps?

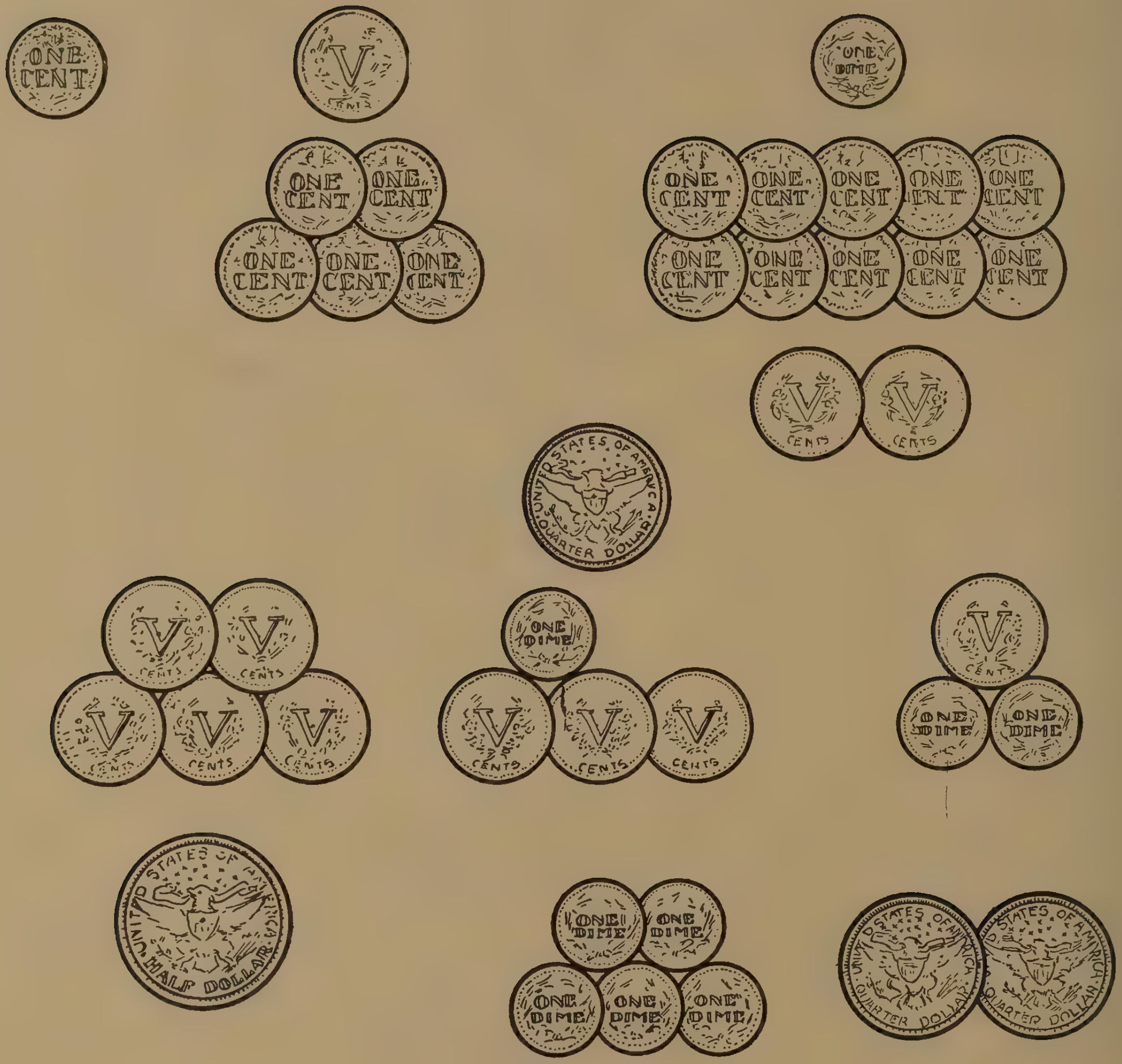


Diagram VII

Let the children "keep store." A small stock of objects will do to begin with; such as bits of ribbon, nuts, apples, pieces of calico, bright-colored paper, slate-pencils, toys, books, etc. Use toy money for making purchases.

The seller should be able after each transaction to explain it simply and clearly. For example: Let George be the storekeeper. A little girl buys 3 papers of pins, at 1 cent per paper, and gives him a 5-cent piece in payment. He should be able to give the proper change at once, and, if asked to do so, to explain the different operations, somewhat after the following manner:

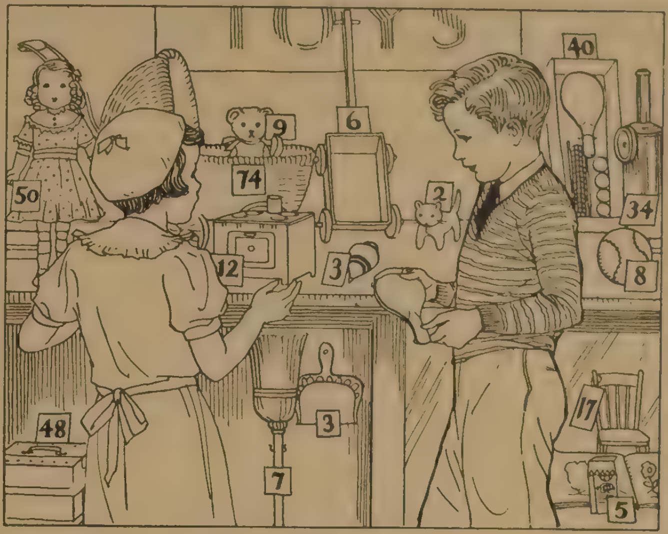
"Harriet bought 3 papers of pins, at 1 cent per paper. The whole cost was 3 cents, because 3 times 1 cent are 3 cents. She gave a nickel. Five cents is 2 cents more than 3 cents, the cost of the pins; therefore I must return 2 cents in change."

The pictures and exercises on page 125 will show clearly how to "play store," using the child's own toys as stock in trade. If he desires a change he can very easily make a grocery store for himself, with scissors and paste, from the advertising pages of the papers and magazines. There are many staple articles that are advertised with colored pictures of the articles themselves. Let the child carefully cut these out and paste them on cardboard, and he will have a first-class line of toy groceries at once. In the same way stoves, furniture, and almost every kind of object may be utilized.

KEEPING STORE

Mother gave Harriet and Fred money to buy toys.

1. How many baskets can they buy for 14 cents?
2. How many carts will 18 cents buy?
3. How many stoves can they buy for 12 cents?
4. How many elephants can they buy for 20 cents?
5. How much will three elephants cost?
6. 50 cents will pay for one ——.
7. 14 cents will pay for two ——.
8. 40 cents will pay for ——.
9. 16 cents will pay for two ——.
10. One doll carriage will cost —— cents.
11. One steam engine will cost —— cents.
12. Choose two toys of one kind and tell the cost, as:
    Two dolls cost 8 cents.
    Two kites cost —— cents.
    Two street cars cost —— cents.
13. Choose three of one kind, as:
    Three dominoes cost 24 cents.
    Three airships cost —— cents.
    Three stoves cost —— cents.
14. How much are three lamps and two books?
15. How much is one engine and two baskets?
16. If Fred has 16 cents, he can buy one soldier and ——?
17. With 25 cents he can buy a kite and ——?
18. With 15 cents, Harriet can buy a —— and a ——.
19. How much is one doll carriage and one large doll?
20. If a doll costs 4c, a broom 7c, and a book 6c, how much change will Harriet receive from 25c?
21. Fred buys half a dozen soldiers. How much will they cost?
22. How much change will he receive from 50c?
23. How much is one kite and one ark?
24. How much change will there be left from 50c?
25. How many different groups of toys could Fred buy with that amount?



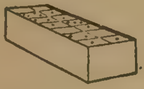
THE TOY STORE

DOLL, 4¢

HAT, 5¢

SOLDIER, 6¢

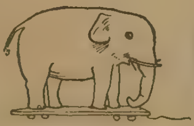
HORSE, 15¢


DOMINOES, 8¢

LAMP, 3¢

STREET CAR, 18¢

BOOK, 6¢


ELEPHANT, 20¢

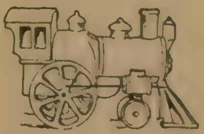
TOP, 3¢

ARK, 25¢

KITE, 7¢

BASKET, 7¢

AIRSHIP, 10¢


ENGINE, 12¢

DOLL, 9¢

PRICE LIST FOR TOYS

The ideas of *one-half* and *one-fourth* and, later, *one-third* and *one-fifth* may now be taught. First use objects, as an apple or an orange. Later Diagram IX will be useful.

The method of teaching these new ideas is to take one whole apple and divide it. When it is divided into two equal parts, show the child that the two parts are really equal, and that they make the whole apple when put together. Then teach the term *one-half*, and say: "Two halves equal a whole."

Teaching One-Half and One-Fourth

Divide one of the halves. Then the other half. There are now four pieces, each one a half of one-half, and the four together still make the whole. Teach that these are *fourths*.

Now take the diagrams of circle, square and rectangle, and show that each one of two equal divisions is ½; and each one of four equal divisions is ¼. By this time, if you take the circle or the square, and without comment divide it into three equal divisions, the chances are that the child will promptly respond *"one-third."* If he does not, he will have no difficulty in understanding the fact, when the name is supplied. The same is true of the expression *one-fifth*.

We are now ready for the foot rule. Supply the rule. Have the child count the divisions, and call the numbers printed on each division. These are *inches*. The whole ruler is *one foot* long. Let him learn: "Twelve inches make one foot."

He will want to measure everything in sight. Let him do so and keep a record of his results. He will want to know the height of chairs and tables, the width of the room, how tall everybody is, and all sorts of tests of distance. This will give a chance to teach him the *half-inch* and the *quarter-inch*, for which your explanation of one-half and one-fourth has prepared him. He will see the necessity as soon as he begins measuring, for few objects will prove to be even inches long, or high or wide. The necessity for knowing these minor divisions of the rule will lead him to ask; and if the previous work has been well done, merely to tell him, "These are halves and fourths," will be sufficient.

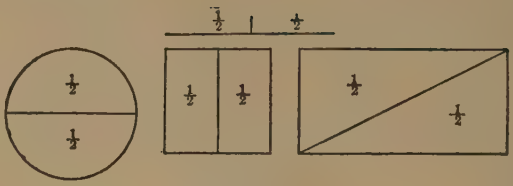
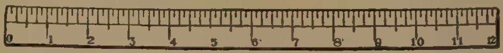


Diagram IX

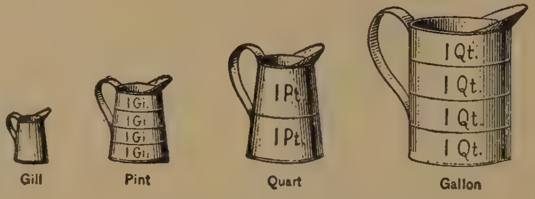


Foot Rule

At this point begin to teach weights and measures, and work them into the child's play as a part of his "keeping store."

Children become familiar with the terms pint, quart and gallon at an early age. Even before they attend school they know that mother buys cream by the pint and milk by the quart, and that father has to have so many gallons of gasoline to operate a tractor or the family car. The four measures shown in the illustration at the left will be helpful in teaching the precise relations between the gill, pint, quart and gallon. It is one thing to learn a table by rote and another thing to prove it. There is an easy way to present this lesson.

Evolve the table, if possible, by having the child use the measures, and by filling one from the other, and learning how many times he has to pour to fill the next measure. Practice on the exercises given in the middle of this page until the child is perfectly familiar with the process. He may then add liquids to his


1 Gi.
1 Gi.
1 Gi.
1 Gi.
1 Pt.
1 Pt.
1 Qt.
1 Qt.
1 Qt.
1 Qt.
Gill
Pint
Quart
Gallon

LESSONS ON LIQUID MEASURE

4 gills make 1 pint.
2 pints make 1 quart.
4 quarts make 1 gallon.

How many gills are there in 2 pints?
How many pints are there in 2 quarts?
How many quarts are there in 2 gallons?
How many gills are there in ½ of a pint?
How many pints are there in ½ of a quart?
How many quarts are there in ½ of a gallon?
How many pints are there in 8 gills?
How many quarts are there in 4 pints?
How many quarts are there in 8 pints?
How many gallons are there in 8 quarts?
How much will a pint of milk cost at a cent for one gill?
How much will a quart of milk cost at 2 cents a pint?

store supplies, provided, of course, that he has the facilities for handling them.

In exactly the same way proceed with dry measure. In the rural home, these measures will be handy, and probably partially known; at least, they will be familiar. In the city it will be necessary to ask the grocery man to let you see the measures he uses for vegetables and other dry groceries that are sold in quantity.

If you have a set of these measures or part of them, they may be added as soon as learned to the equipment of the play store. This will serve two very valuable ends: it will give the child practical use of the new measures, and it will add such new flavor to the store game as to keep it from becoming tiresome and uninteresting.

Dry Measure

The weights and balance are already somewhat familiar, from going to the store. A set can be procured at any hardware store.

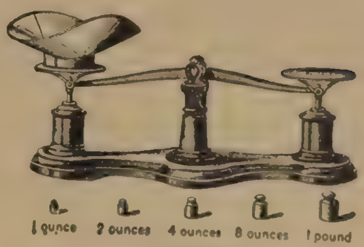
Teach the weights by name. Drill on the table. Show that:

2 ounces make $\frac{1}{8}$ of a pound.
4 ounces make $\frac{1}{4}$ of a pound.
8 ounces make $\frac{1}{2}$ of a pound.
16 ounces make one pound.

Roman numerals, the clock face and how to tell the time of day are the next problems. Any old clock face will do, or a toy clock face twelve inches square, with movable hands, can be bought through any school supply house or stationer, for about twenty-five cents.

The Roman numerals IV and VI, also IX and XI, are easy enough when the child is shown that IV means 5 less 1; and VI means 5 plus 1. Also that IX means 10 less 1, and XI means 10 plus 1. There are only three symbols to learn at first, I, V and X. XX would be 10 plus 10, of course, and XXX would be 10 plus 10 plus 10. Further than that it is not advisable to go for the present.

When the child has mastered the numbers, take the clock face, and teach the hours. Show that from noon to supper is from twelve o'clock to six o'clock. He knows that, anyway, so that it is merely a new form of expression. Then from supper to midnight, and from midnight to time to get up, will bring the larger hand around and around the face as many times as there are figures of hours to pass by.



Weights

Each circuit of the face by the long hand (which is called the minute hand) is *one hour*. Each hour is divided into sixty smaller divisions called *minutes*. The small hand points to each hour in turn, as the long hand checks off the minutes that go to make it up. Twice around the clock for the hour hand (or twenty-four hours) makes one day. When this is clear, it will be time to show Diagram X and let the child practice reading hours and parts of an hour.

He already no doubt knows the days of the week separately, even though not in order. It is time now, therefore, to take the calendar, and show the days of the week in order, by name, and how many there are; the number of days in each month, and the number of months and days in a year. By this time, if he has been learning to read the numbers as he learns to use them, he will have no difficulty in reading all the figures on the calen-

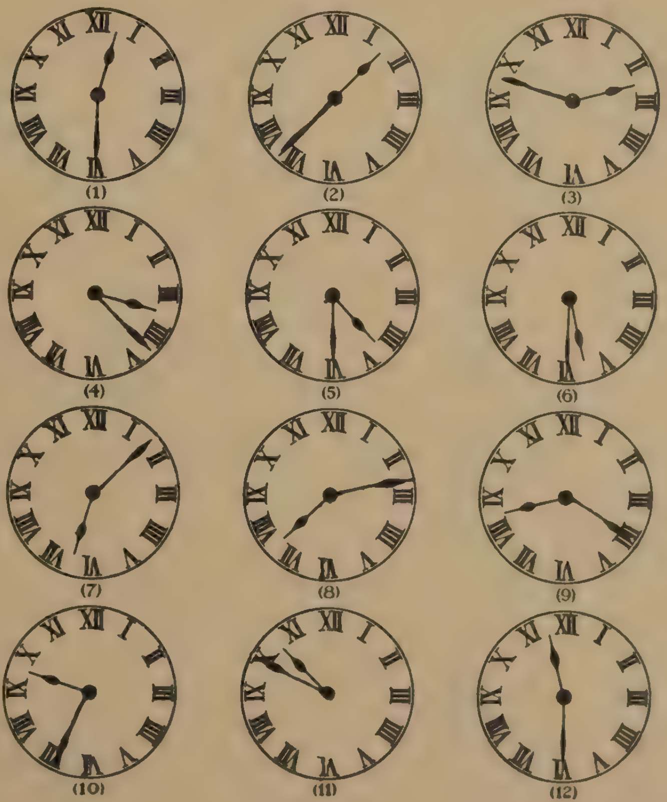


Diagram X

dar, or in understanding what is meant by them.

Another suggestion to be made for home instruction is the problem of measuring heat and cold —the temperature. Any ordinary thermometer will serve the purpose. There should be one indoors and another out-of-doors.

First show the child that certain days are warmer and other days colder, both indoors and out. The question of interest there is, "How much warmer?" or, "How much colder?" To know that, we have to be able to measure the amount of heat and cold, just as we measured and weighed solids and liquids. This is done by the thermometer. The divisions are called *degrees* and are very carefully determined. The temperature at which water turns to ice is a fixed point. We call it thirty-two degrees above zero. The heat of the blood, the boiling point, and the zero point, as well, can then be located from this point.

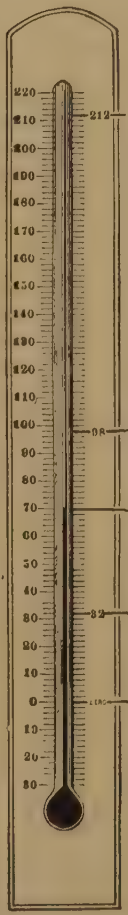
Then teach and drill upon the exercises given in the lesson in the center of the page. When that is done, the knowledge may be used as before, in natural play. Let the child keep track of the indoor temperature. That should be, as nearly as possible, 70°. If it goes above, or falls below, he can report it, and see that the furnace adjustment is made. Later he may be given the care of the heating, and regulate the fires by the thermometer.

HOUR	TEMPERATURE						
	SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.
7 A. M. . .	60°	61°	70°	75°	64°	63°	58°
12 M. . . .	78°	74°	84°	90°	75°	68°	62°
2 P. M. . .	83°	79°	90°	90°	78°	69°	63°
7 P. M. . .	81°	73°	83°	85°	71°	65°	60°

Record of Daily Temperature

Similarly, a record from day to day and from week to week, of the outdoor temperature will be a never-failing source of interest and pleasure. Many interesting comparisons may be made, as the child progresses, between average daily and weekly temperatures, and the prevailing temperatures of the different seasons. This may ultimately grow into a study of climate in general.

—*Edward A. Parker.*



LESSONS ON THE THERMOMETER

1. The degree of heat that everything has is called its temperature. What is it that measures temperature? When the liquid in the thermometer rises, is it growing warmer or colder? When the liquid goes down?
2. Find zero (0) on this thermometer. What temperature does this thermometer show now?
3. Find the freezing point. That is how many degrees above zero? It is how many degrees below the boiling point of water?
4. When the thermometer out of doors shows 10 degrees (10°) below zero, what do you think the season is? It is how many degrees below the freezing point? What is the season when it shows 90 degrees (90°) above zero?
5. When it is 49° above zero at sunrise and 18° higher at noon, what is the temperature at noon?
6. When water is at 58°, how much must it be heated before it boils? How many degrees must it cool before it freezes?
7. The temperature of the blood is 98° above 0. It is how much above the freezing point?
8. Look at the thermometer and tell how warm the room is. It is how much cooler than your body?

Lessons in Drawing

By D. R. AUGSBURG, Teacher of Drawing, Author of "Easy Things to Draw," "Drawing With Colored Crayons" and Augsburg's Series of Drawing Books.

MATERIALS

THE materials necessary for home equipment in drawing are:

Two lead pencils.
Several tablets of drawing paper.
A blackboard.
A box of white crayon.

The pencils should have a large, soft lead. It is best to have two or even more pencils, so that a blunt or a sharpened point may be used as occasion demands. A blunt or worn point is used for broad lines and a sharpened point for finer lines. One obtains lightness and darkness of lines by varying the pressure on the pencil point.

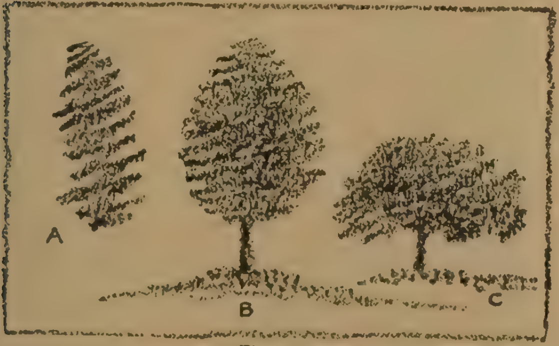


Figure 1

The handiest size of paper for pencil drawings is a tablet four and one-half by six inches. This is large enough for drill purposes and for ordinary work with the pencil. Larger sizes may be used if needed. Any kind of drawing paper may be used. Both paper and blackboard should be employed. The paper is for small drawings and the blackboard for large drawings requiring full arm movements.

Procure a blackboard three feet wide and five feet long. Place it firmly against the wall, at least three feet from the floor. A good rule to follow is to place the lower edge of the board twelve inches below the collar of the one who is to use it. The child should reach up and place the drawing above the collar rather than below, in a cramped position. Use the best grade of dustless white crayon.

There is no surface equal to a blackboard for drill purposes in drawing. The largeness of the surface gives freedom, its publicity stimulates effort and creates confidence, and the large, full lines lead to precision and grace. Economy, efficiency, and freedom and rapidity of movement characterize blackboard drawing.

DRAWING A TREE

Trees are excellent objects for first lessons in drawing, on account of the freedom of stroke required and the large lines necessary to represent the tops. Use a blunt pencil point so as to make large lines, like those in A, Figure 1. With a free stroke, mass in the top or crown of the tree as shown in B, then add the trunk, and lastly, the ground under the tree.

Use a strong black line. The heavy black lines are the most difficult to acquire, so learn to use them at the beginning of your work. First, get the stroke as in A, then draw the tree as in B. B is an oval-shaped tree and C is a broad tree. Practice both of them until you can make them with some freedom.

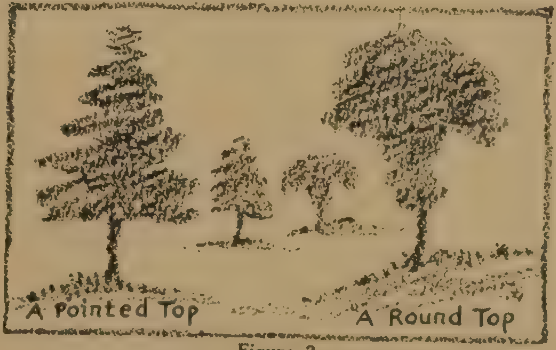


Figure 2

Pointed Top and Round Top Trees. When representing trees, make the boughs appear as if they came out from the trunk, which may be taken as the center of the tree. Do not outline the tree before drawing it as this hinders the freedom of movement, but rather draw the tree direct. Begin at the top of the tree and work downward. Make the trunk darker than the top or foliage part of the tree. Practice these two trees until you can draw them freely, and from memory. You will now have four trees to use; a round tree, a broad tree, a pointed top tree and a round top tree.

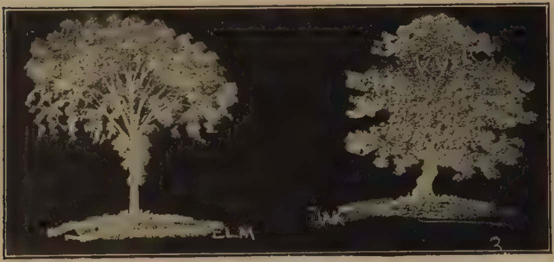


Figure 3

Trees on the Blackboard. When drawing trees on the blackboard, use the side of short pieces of crayon to mass in the top, and use the end of the crayon for the trunk and details. By grasping the crayon between the thumb and three fingers, a line ranging in width from a fine to a broad line can be made by simply tilting the crayon. Learn to draw on the blackboard a round tree, a broad tree, a pointed top tree and a round top tree.

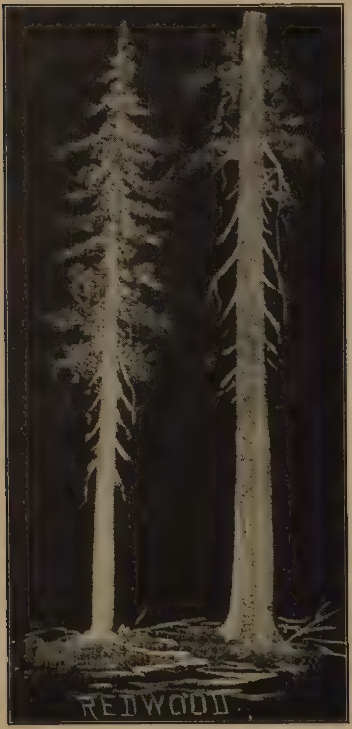


Figure 4

Drawing Tree-Trunks on the Blackboard. The two trees in Figure 4 are California redwoods, great trees with trunks straight as arrows and much like our eastern white pine.

These tree-trunks can be represented on the blackboard by using the side of a short piece of crayon. They can be represented almost with one stroke of the crayon. Of course, the limbs and details are drawn with the end of the crayon.

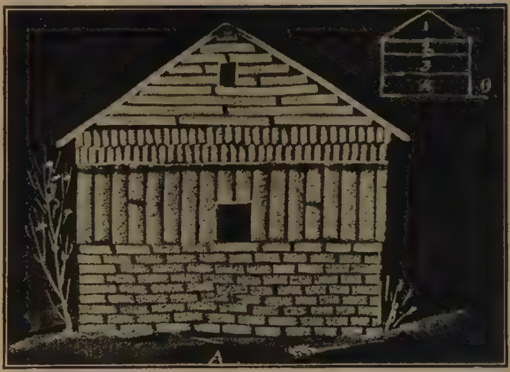


Figure 5

Practice drawing these tree-trunks on the blackboard until you can draw them with some degree of facility. These represent very much the same principle as most evergreen trees, and by learning these it will aid in extending the principle to others.

LEARNING BROAD LINES

It is well to learn how to use broad lines, both on paper and on the blackboard.

Mark out this drawing about two feet long, with light lines as shown in B, Figure 5, the small drawing in the corner. Then, with the side of short pieces of crayon, mark in with single strokes the shingles, boards, and stone work. Use strong firm lines. On paper the blunt point of the pencil can be used. Hold the pencil as in writing.

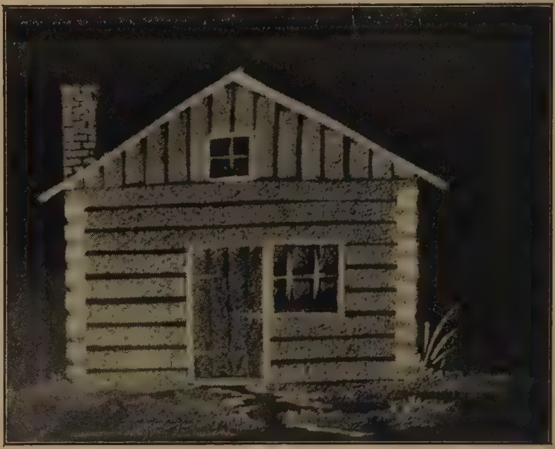


Figure 6

The trees that you have learned may be introduced into your drawing, at the right and left of the building.

A Log House. The house in Figure 6 is made with the side of the crayon. Use a piece about an inch long. Make the lines strong and firm. First, mark out the house with light lines and then fill in with the broad lines, using one stroke for each board or log. The windows and doors may be made with the eraser or they may be made separately.

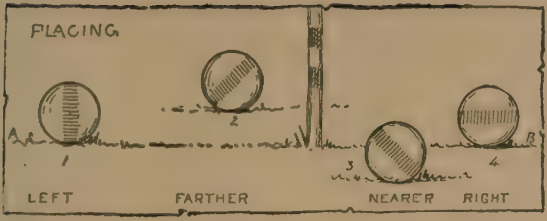


Figure 7

Figures 4, 5 and 6 may be combined. The house may be drawn and then the redwood trees placed right, left, farther or nearer, at pleasure.

The house may be drawn on paper with the blunt end of the lead pencil. The tree-trunks may be drawn in the same way.

Placing

One of the first things to learn in drawing is how to place objects in the picture. You see, everything must have a place to rest. There are four principal resting places and they are shown in Figure 7. In this drawing there is a croquet post, and through the point where it is driven into the ground is a line marked A B. Objects resting on this line are right or left of the post. Objects resting above this line are farther than the post, and objects resting below this line are nearer than the post.

In the drawing there is one croquet ball at the left of the post, one at the right, one farther and one nearer.

Draw the croquet post. Place one ball at the left of it, one at the right and one farther.

Draw the post and place one ball at the left, two farther and one nearer. Practice placing these balls until you can do it without much trouble.

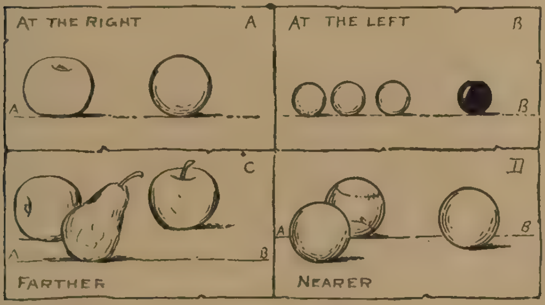


Figure 8

PLACING OBJECTS

In A, Figure 8, there is a ball at the right of the apple, in B there are three marbles at the left of the black marble, in C there are two apples farther than the pear, and in D there are two balls nearer than the baseball.

Drawings are usually made with lines. It is not well to use only one kind of line in drawing, any more than in speaking to use only one tone of voice. Learn to use at least three lines, a light line, a medium line and a heavy line. The heavy black lines are the most difficult to learn. One must bear down hard on the pencil to make black lines, and hard on the crayon to make heavy white lines on the blackboard. In the following exercises use heavy black lines on paper and heavy white lines on the blackboard.

Draw an apple and place two balls at the right.

Draw an apple and place one ball at the left and two at the right.

Draw an apple and place three balls farther.

Draw an apple and place two balls nearer.

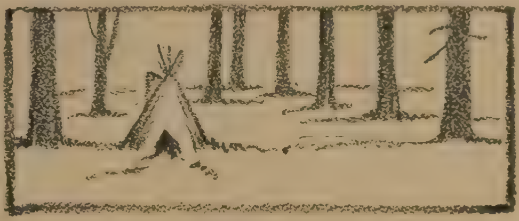


Figure 9

Draw a black marble and place two white ones at the left and one at the right.

Draw a black marble and place one white one at the left and three farther.

Draw a black marble and place one white one at the right, one at the left, two farther and one nearer.

Draw a pear and place two apples farther.

Draw an apple and place two pears farther.

Draw a pear and place one apple at the left and two farther.

Draw a baseball and place one ball nearer and one farther.

Draw a baseball and place one farther, one at the left and one nearer.

Draw an apple and place a pear farther and a baseball at the right.

Placing Trees around a Wigwam. In Figure 9 there is a wigwam with one tree at the left of it, one at the right and six farther. Strive for the principle. Try to see that this simple way of

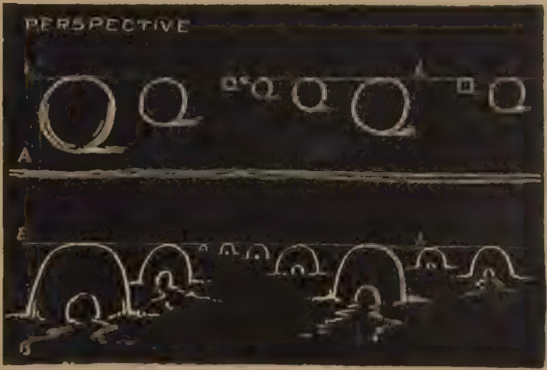


Figure 10

placing is just as true in a great painting as it is in these simple drawings; that this principle is of universal application.

Use strong black lines for the tree-trunks. The placing is the same as that in Figures 7 and 8.

Draw a wigwam and place a tree-trunk at the left and two farther.

Draw a wigwam and place a tree-trunk at the right and three farther.

Draw a wigwam and place one tree-trunk nearer, one at the right and five farther.

PLACING OBJECTS IN PERSPECTIVE

Objects may be placed in perspective, that is, arranged at various distances away, with the aid of the horizon line. The horizon line is the light line marked E L in Figure 10. E L stands for Eye Level, and that is what the horizon line is intended to mark. The horizon line is that line where the sky and earth seem to come together when viewed from a level plain or the shore of the ocean, and in drawing is represented by a light horizontal line.

In A, Figure 10, the top edge of each of the balls is made to touch this line. When this is done, it does not make any difference how large or how small the balls are drawn, they are always in perfect perspective, and seem to be various distances away. The larger the balls the nearer they appear, and the smaller the balls the farther they appear.

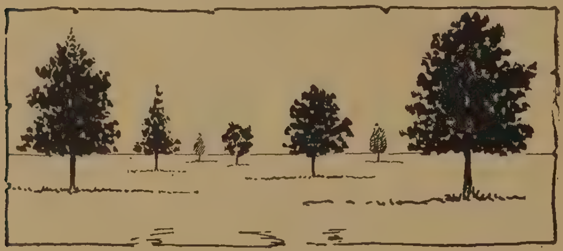


Figure 11

Draw the nearer balls with heavy lines and those farther away with lighter lines.

Draw three balls various distances away.

Draw five balls various distances away.

Draw seven balls various distances away.

Draw nine balls various distances away.

B, Figure 10, shows semicircular huts that are drawn in the same manner as the balls. Use heavier lines for the nearer huts and lighter lines for those farther away.

Draw four huts various distances away.

Draw six huts various distances away.

Draw seven huts various distances away.

Trees in Perspective. Trees may be drawn in perspective by placing the top or leafy portion of the tree above the horizon line and the trunks below, as shown in Figure 11.

The longer the stem or trunk of the tree the nearer it is, and the shorter the trunk the farther away it is. Or perhaps it is better to say that the larger the tree the nearer it is, and the smaller the tree the farther away it is.

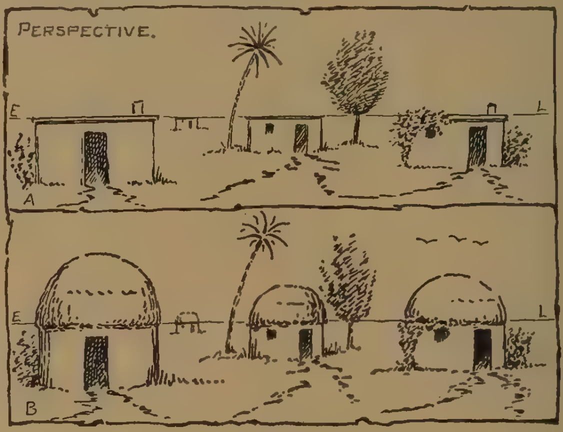


Figure 12

Draw three trees various distances away.

Draw four broad trees various distances away. (See Figure 1.)

Draw five pointed top trees various distances away. (See Figure 2.)

Draw five round top trees various distances away. (See Figure 2.)

Houses in Perspective. In A, Figure 12, are four rectangular shaped cabins drawn various distances away. They are drawn in the same manner as the balls in Figure 10, that is, the top line of the cabin touches the horizontal line. The farther cabin has a tree at the left of it and one at the right.

Draw three cabins various distances away.

Draw four cabins various distances away.

In B the huts are like the cabins in A, and to the top is added a semicircular roof. The dividing line between the roof and body of the hut is the horizon line.

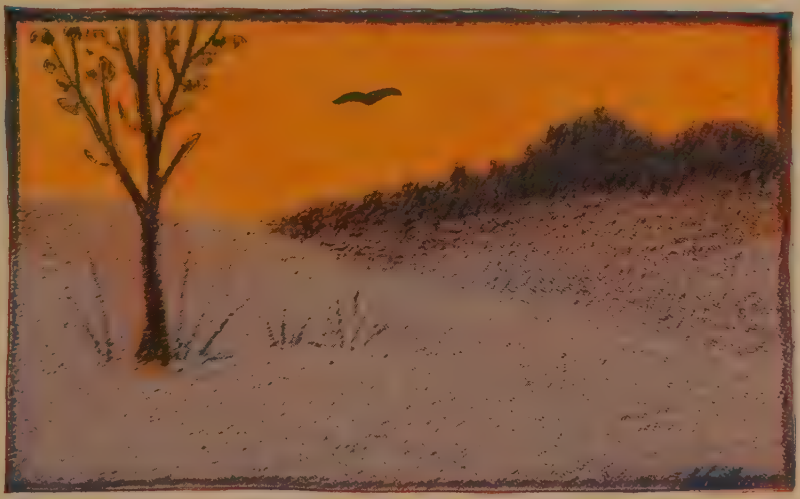
Tree-trunks may be placed right, left, farther and nearer than the nearest hut, and whole trees right, left, farther and nearer than the farther huts.

Draw the nearest hut. Place a tree-trunk at the left of it and two farther.

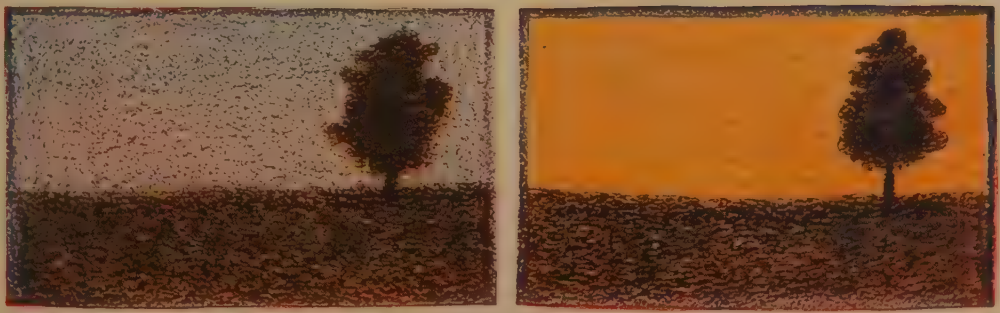
Draw a hut near by and one farther away. Place a tree at the right of the farther hut and two trees beyond.

Draw three huts different distances away.

Of course, objects in nature are not seen, ordinarily, with the top or a definite part of the objects on a level with the eye. They are so represented here as a part of a method to learn how to draw objects in perspective. Trees and houses in nature would show various parts on a level with the eye, but to learn how to show perspective we must have a definite plan or method.



Colored Plate III



Colored Plate IV

LANDSCAPES

All love to draw landscapes. They are indeed, exceedingly interesting to draw and pleasing to look at.

In general, a complete landscape has four parts, sky, distance, middle distance and foreground, as shown in A, Figure 13.

The term sky explains itself. Distance is that part of the landscape that is far away, such as distant mountains and hills. Middle distance is that part that is nearer than the distance and farther away than the foreground; the foreground is the nearest part of the landscape, the part that is close to the observer.

In Figure 13, A represents the parts of the landscape. The mountain and the lake would, in general, be called the distance.

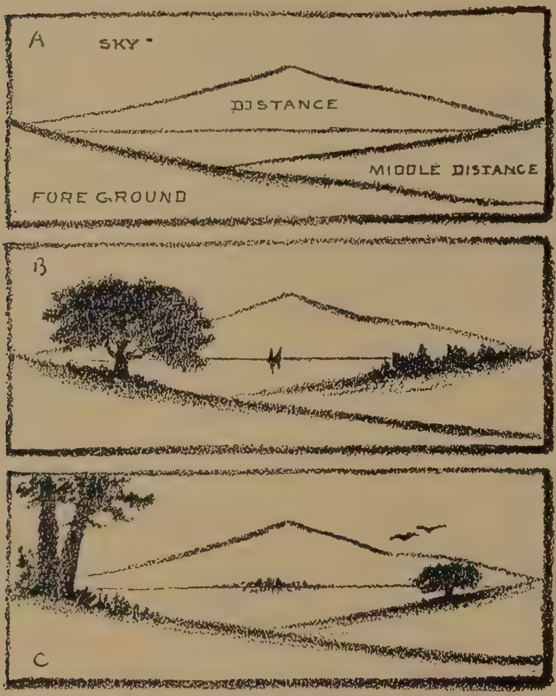


Figure 13

B is the same landscape with a tree in the foreground and a wood in the middle distance; C is the same landscape with tree-trunks in the foreground and a tree in the middle distance. These landscapes may be drawn about five inches long on paper and thirty inches long on the blackboard.

Parts of Landscapes. A landscape need not have all of the parts shown in Figure 13. A, in Figure 14, has only two parts (not counting the sky), B has two parts and C only one. Try to represent the following:

Draw the middle distance only of A, Figure 14.

Draw the middle distance of landscape B.

Draw the middle distance of landscape B, Figure 13.

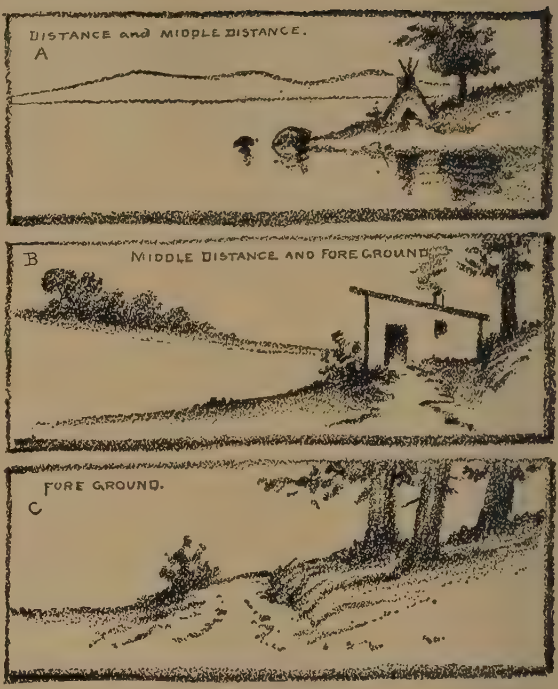

DISTANCE and MIDDLE DISTANCE.
A
B
MIDDLE DISTANCE AND FORE GROUND
FORE GROUND.
C

Figure 14

Draw the foreground of landscape B, Figure 13.

Draw the foreground of landscape C, Figure 13.

Draw the foreground of landscape B, Figure 14.

Draw landscape C, Figure 14.

Draw the middle distance and distance of B, Figure 13.

Add distance to C, Figure 14.

Action

Dear to every child's heart is action or movement. Perhaps the representation of movement gives more pleasure to boys and girls than any other branch of drawing.

In Figure 15 there is an ostrich, a boy and a deer. The ostrich is standing still, the boy is walking and the deer is running.

The ostrich is standing still. Observe that the long legs and the long neck of the ostrich are vertical. The fact that they are vertical is what makes him stand still. In drawing as well as in actual life the vertical line expresses stillness. It is the "still line," and wherever it is used its

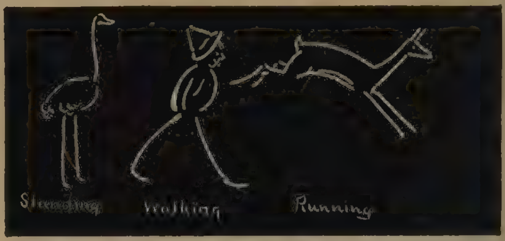


Figure 15

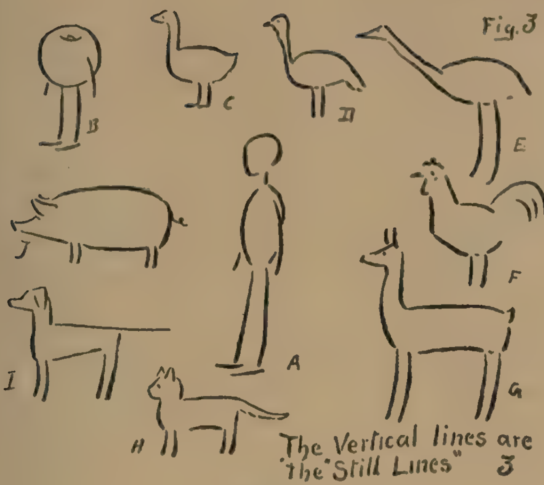


Fig. 3
B
C
D
E
F
A
G
J
I
H
The Vertical lines are the "Still Lines"
3

Figure 16

expression is that of lack of motion; that is, quiet.

The oblique line more than any other line expresses motion. The boy is walking, and you will observe that the legs are oblique. The deer is running, and the legs, body and neck are all oblique. The oblique line is the "go line" of drawing.

See if you can make the ostrich run.
See if you can make the ostrich walk.
See if you can make the ostrich stand.

Make the boy stand still.
Make the boy walk.
Make the boy run.

Make the deer run.
Make the deer stand still.
Make the deer walk.

THE ACTION OF STANDING

As the vertical line is the line of stillness, this line must predominate in standing figures. In Figure 16 you can see that this is so.

The central figure, A, is the typical action of standing, and around it are various birds and animals, each expressing the same action. Observe that the ostrich, E, has made his neck oblique, and notice how this imparts a little movement to the figure. Action is impersonal, hence the apple, B, can be made to stand the same as an animal.

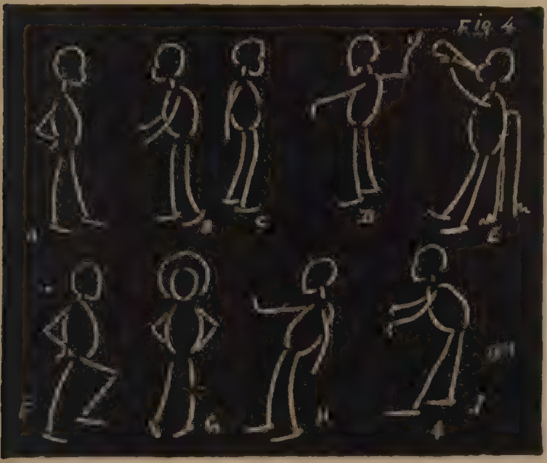


Figure 17

Make an apple stand.
Make the goose and the turkey stand.
Make the deer and the ostrich stand.

Make the rooster and the cat stand.
Make the dog and the pig stand.
Make the boy and the dog stand.

Ways of Standing. There are many ways of standing, as may be seen in the blackboard drawing, Figure 17. Figures A and B are talking, D is speaking a piece and C is listening to him. E is tooting a horn and the others are performing various actions.

An action is best learned through the copy. By imitating these actions and by studying the principle back of them, one soon learns how to represent action.

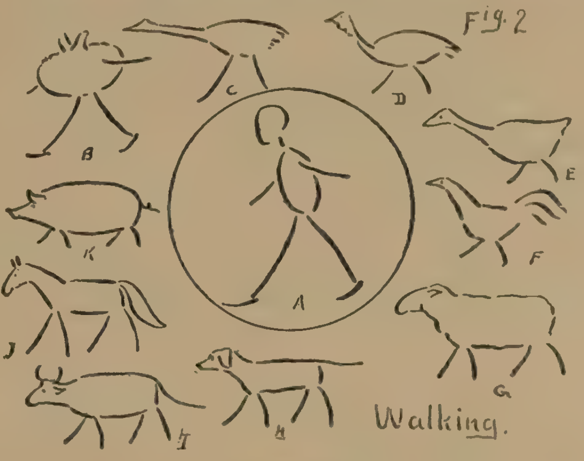


Figure 18

Draw the little figures about three inches long on paper and about sixteen inches long on the blackboard. Represent the following standing actions.

Represent a boy catching a ball; flying a kite; tooting a horn; speaking a piece; looking at a balloon; looking on the ground; pointing upward; pulling a rope; pushing. Represent two boys talking.

THE ACTION OF WALKING

An action can hardly be learned from the object that expresses the action, but rather from the way others have expressed it. Action is not a thing but a movement, and as such is impersonal. A stick can be made to walk as readily as a boy. The turnip, B, Figure 18, is walking. An action is revealed through the direction of lines.

The boy, A, is walking. We may say that it

Colored Plate V

Colored Plate V-a

Colored Plate V-b

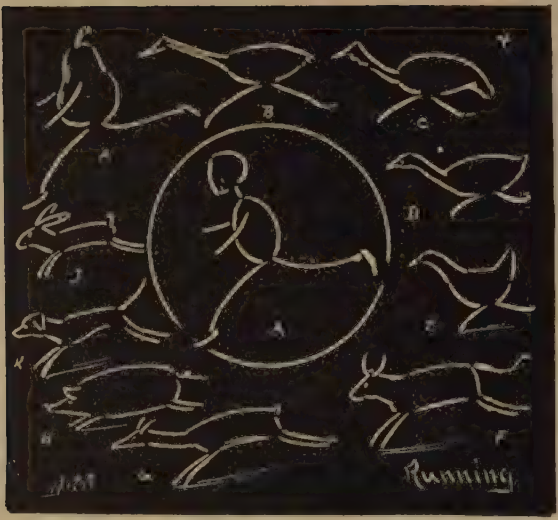


Figure 19

is a typical walk, and this same action is applied to the birds and animals that surround him. Draw the boy walking, and then in succession apply the same action, or walk, to each bird and animal. The principle is the essence of the action. Look for the principle.

Draw the boy walking and then draw each bird and animal, all the time trying to understand the principle of walking.

Represent a boy walking with a basket on his head; carrying a rock; pulling a cart; leading a dog; walking fast; walking slowly.

THE ACTION OF RUNNING

The boy, A, Figure 19, is running; surrounding him are birds and animals with the same action. With the four-footed animals the two front legs are taken as one and the two hind legs as one. This makes the action of running for them the same as in the two-legged figures. The pear, A, is made to run as though it were alive, thus showing that movement is not a part of the object.

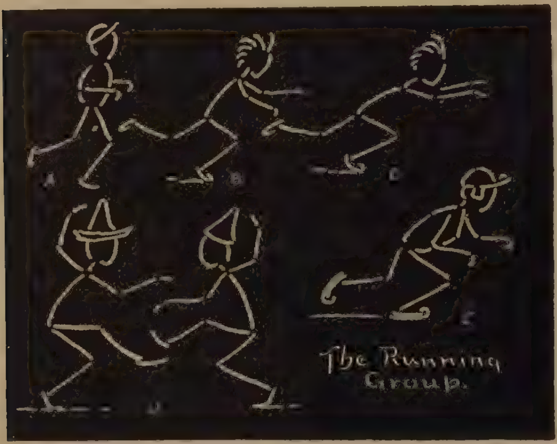


Figure 20

Character, which is often mistaken for the action, belongs to the object, or to the individual, but the movement itself is impersonal. For example, the action of running is common to all animals, but the character of the run varies with each individual. One easily distinguishes the run of a dog from that of a cat or rabbit. We learn the character from the individual, but the action itself is best learned from the copy. We can learn the general action of running by imitating the action in these figures; do not blindly copy them merely to make a drawing, but have in view the learning of the action itself. Learn the action by repeating it until learned.

Ways of Running. In Figure 20 the first three figures show degrees of running. The boy with the cap is running slowly, the Indian boy, B, is running faster, and boy, C, is running faster still. This is done through the slant of the lines. The vertical line is the line of stillness; there is no motion in it. Slant it slightly and it suggests movement; slant it still more and the movement is increased, just as it is in a falling pole or tree, the nearer it approaches the horizontal the faster it travels.

Observe that the elbow joints and the knee joints are represented in these figures. These joints may be shown by a space, for a space may represent an idea as well as a line.

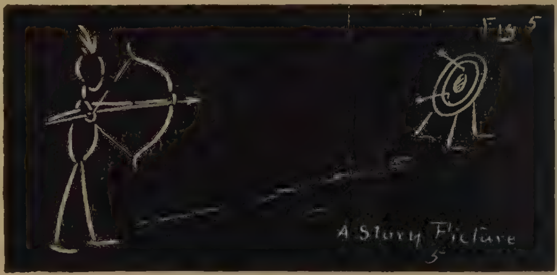


Figure 21

There are five forms of action. They are standing, walking, running, sitting and reclining. Around these five may center nearly all action. For example, the actions of skating and dancing are phases of running. As a little fellow said, "Dancing is standing still and running, and skating is running on skates."

STORY PICTURES

A story is always interesting, and so these story pictures may be made a source of never ending delight. After some skill has been acquired in drawing the little action figures, story pictures may be drawn, similar to the Indian boy shooting at the mark with his bow and arrow. With a very little change he may be made to shoot at a tree-trunk, a deer or a bird.

Draw a boy flying a kite; rowing a boat; pad-

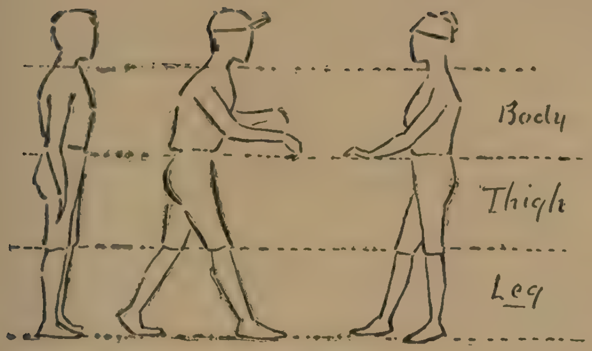


Figure 22

dling a canoe; pushing a wheelbarrow; pulling a cart; climbing a ledge of rock; sitting on a log, fishing. These and many others can be made when once confidence is established in the ability to get results.

THE HUMAN FIGURE

Boys and girls are the most interesting objects to which action can be applied. Perhaps the most simple way of drawing the human figure is to make the body, thigh and leg of equal length.

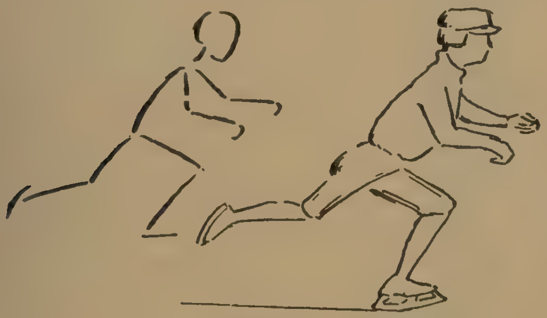


Figure 23

Draw four light horizontal lines at equal distances apart, as in Figure 22. These equal spaces will divide the human figure into three equal divisions, body, thigh and leg.

The body, in these divisions, extends from the neck to the belt, the thigh from the belt to the knee, and the leg from the knee to the bottom of the foot. These are natural divisions, and are discernible on boys and girls at a glance. These three equal divisions become the general guide in the placing of these parts.

Preference in length may be given to the thigh.

The head and neck are put in place with the aid of the judgment alone. Observe and learn: that the foot is about one-half the length of the leg; that the whole arm, including the hand, reaches to about the middle of the thigh, and the elbow about to the belt.

Draw the figure in the following order: First the body, next the thigh, then the legs and arms, and lastly, the head.

Applying Action. To get the action right is one of the most difficult parts of drawing the human figure. The best way to overcome this is to represent the action by a separate figure, as shown in Figure 23. Here the action of skating is first drawn, using single lines to represent the parts, and then the full-proportioned figure is drawn with the same action. The action figure may be drawn smaller and on a separate piece of paper.

Any of the drawings in Figures 17 and 20 may be made into full-proportioned drawings.

Representing Action. Here are four figures illustrating the drawing of the human figure, showing in the most simple manner how the work is done. The figures represent running, kicking a foot-ball, catching and sparring.

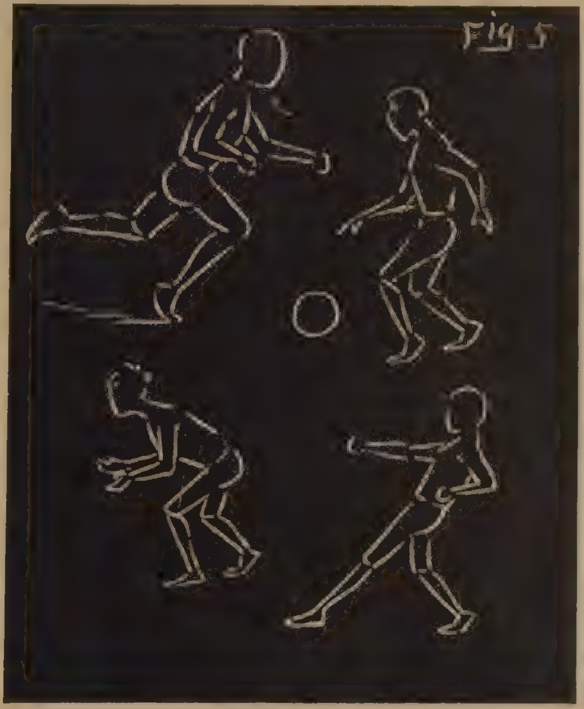


Figure 24

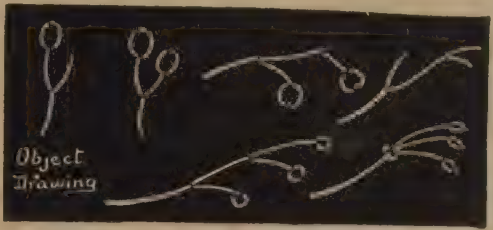


Figure 25

First learn how to draw the figure, how to get the proportions, and how to put each part in place. After some power is gained, such actions as the following may be represented:

A boy running; dancing; skating; catching a ball; rowing; fishing; pushing; pulling; climbing a tree or ladder.

Object Drawing

Object drawing is drawing directly from the object as a model. In doing this the first lesson one must learn is that he cannot represent all that the eye sees. Perhaps the best way is to begin with small twigs, dried grasses, and objects similar to those in Figure 25. Observe that the stems are represented by a single line and the joints by a space. The object may be held in the hand, as shown in Figure 27, for either blackboard or paper.

This kind of drawing is very rapid, and like most rapid work is interesting.

The Graded Line. The graded line is one that varies from light to heavy and from heavy to light. The graded line is a very pleasing line and it is well to learn how to use it. In the drawing there are various objects drawn with the graded line. So rapid is this line that one skilled in its use could draw direct from the object every drawing in Figure 26, in a very few minutes.

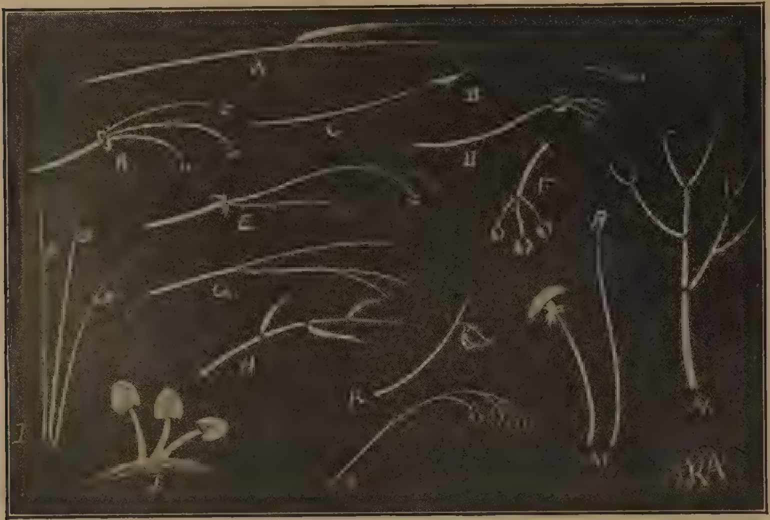


Figure 26

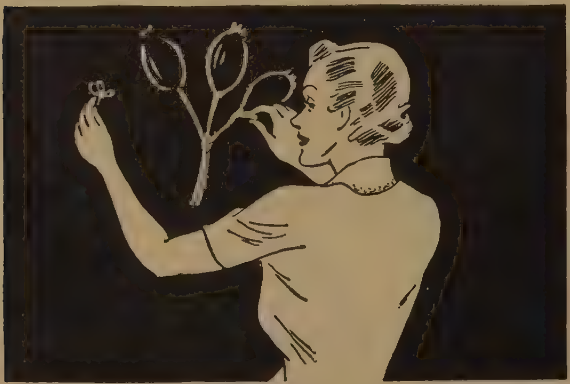


Figure 27

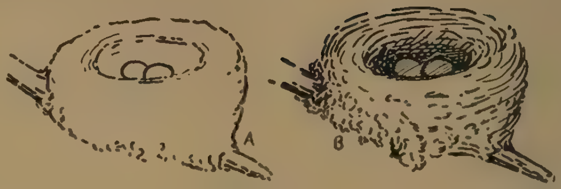


Figure 28

Practice drawing these stems, buds and grasses, then procure real ones and draw them in the same manner.

If you cannot make the graded line, practice it on the blackboard until you can draw it. Stems G and M are especially good exercises for the purpose of learning the line.

Imitation. We cannot draw all that we see, nor represent the object exactly as it appears to the eye. Imitate as closely as we will, our efforts are merely relative as compared with nature. Place a bird's nest before you. You cannot imitate it exactly as it appears to the eye, but you can translate it with few lines, as in A, Figure 28, or many lines, as in B; but not as completely as the real nest.

The object cannot show us how to draw the object. We can draw it in any manner we wish; we can draw the whole object or a part, we can represent it with few details or with many, in outline or in mass. In fact, all the object can do is to show you what to draw, but it has no power to show you how to do it; that is the office of the instructor and the copy or drawing.

Birds' Nests. Birds' nests make fine models for drawing. They are not only good models but are very interesting. In Figure 29 are some humming-birds' nests. Observe how they are mounted. A is attached to a tough leaf, and B, C and D are fastened to a limb. In the fall of the year, after the bird is through with the nest, the limb can be cut off and used as a handle to hold the

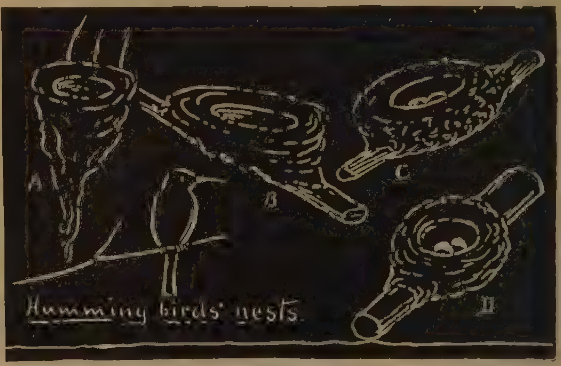
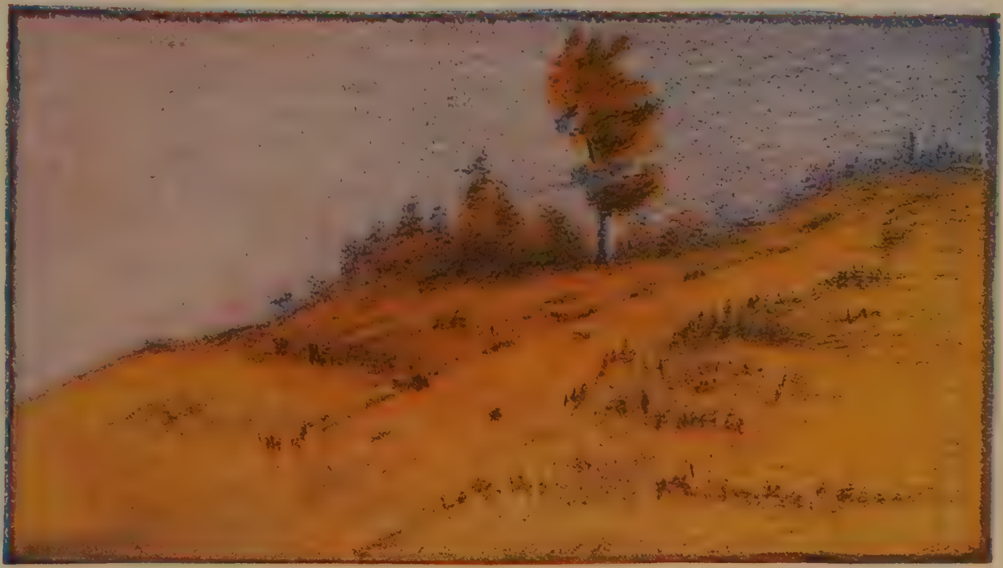
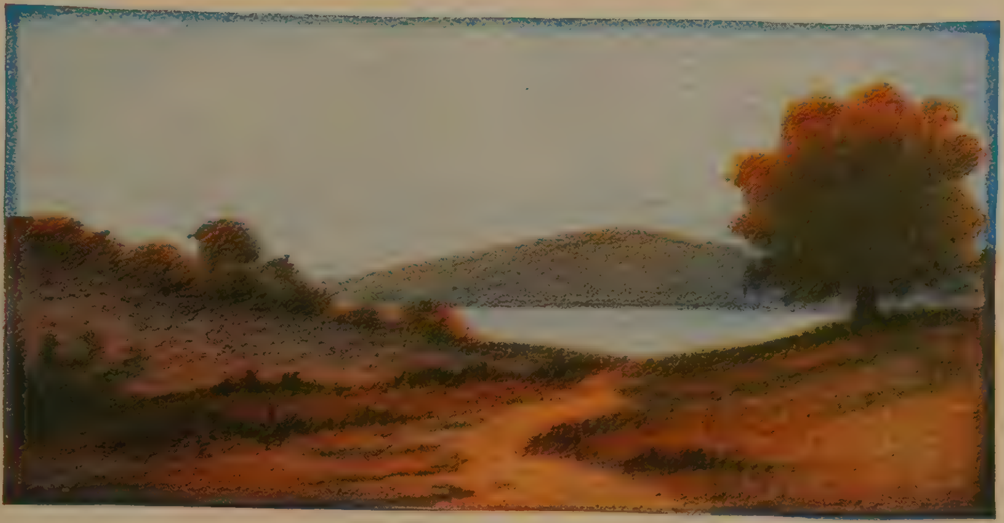


Figure 29



Colored Plate VI-a



Colored Plate VI

nest when it is being drawn. A collection of birds' nests makes a fine set of models for drawing.

Preparing Objects. Most natural objects need to be made more simple before they can be used for drawing. This is done by reducing the number of parts, removing those that come toward you and those that recede, and also avoiding lines that cross. Of course after some power has been gained and these difficulties can be overcome, the object need not be made so simple. At first, reduce the object to not more than three parts. One naturally thinks he must draw the whole object, but it is well to learn early that this is not necessary. We can draw the blade of a jack-knife without drawing the whole knife, we can show how the end of our pencil is sharpened, or how the pen fits into the penholder without drawing the whole pencil or pen. We can also make the drawing as large or as small as we wish. In general, a blackboard drawing should show plainly across the room, and a pencil drawing should be of such a size that the movements are not cramped and the strokes of the pencil can have considerable freedom.

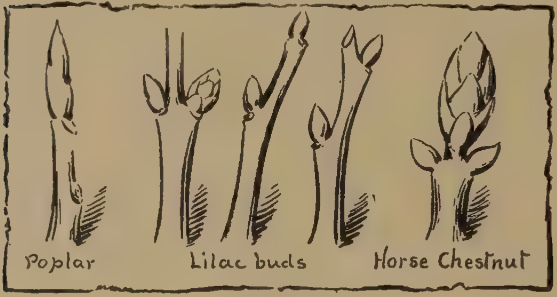


Figure 30

Buds such as those in Figure 30 make very good models. Observe that they are drawn in such a manner that none of them are foreshortened.

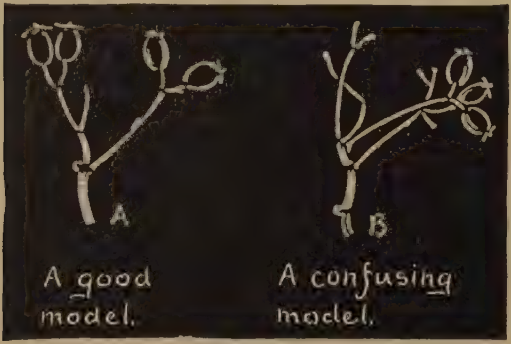

A
B
A good model.
A confusing model.

Figure 31

How to Avoid Confusion. Confusion is the mischief-maker in object drawing, and must be avoided. Confusion is caused by the crossing of lines, by lines close together, and by too many parts.

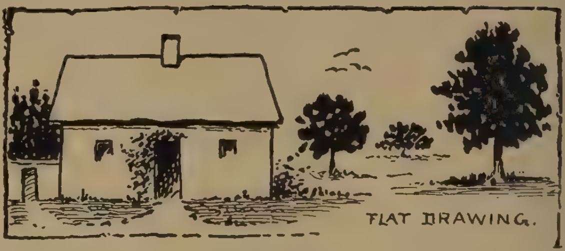

FLAT DRAWING.

Figure 32

Confusion may be avoided by holding the model in such a manner as to avoid the crossing of lines. If the lines are close together spread them apart, or cut away those that seem to obstruct; if there are too many parts remove those that are in the way, or those that are foreshortened. In other words, prepare your model in such a manner as to remove all that is confusing to you.

The Easiest Way. The easiest way to represent objects is to draw them as they would appear when directly in front of the eye. It is a mistake to think we must represent all that the eye sees; we can represent the minimum as well as the maximum. To stand directly in front of the house and draw it as in Figure 32 will as often make as pleasing a picture as to represent the sides and thus increase the difficulties. When only one face of an object is represented, it is called flat drawing.

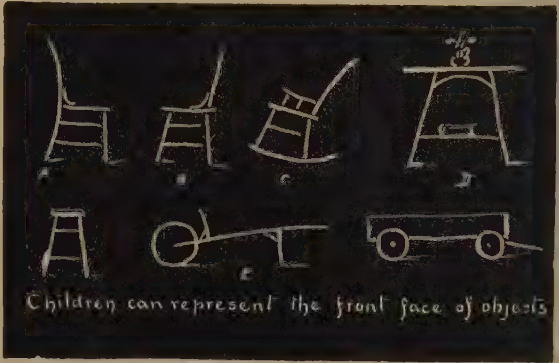

Children can represent the front face of objects

Figure 33

The house represents flat drawing, and the trees at the right suggest perspective after the manner shown in Figure 11. Nearly all objects may be represented in flat drawing.

FLAT DRAWING

One can draw the front face of a chair, a table, a wheelbarrow, a cart, or any other object, if he so desires, without drawing the farther faces or details. In Figure 33 only the front part has been represented, and the work has been made still more simple by representing each part with only one strong, heavy line. Using one line and drawing only the front face brings object drawing within the range of both young and old, and makes the drawing very rapid as well as success-

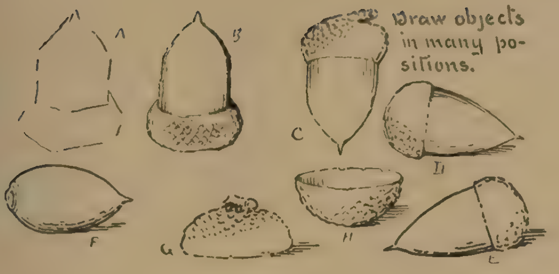

Draw objects in many positions.
A
B
C
D
E
F
G
H

Figure 34

ful. If we try to represent all we see, the chance of failure is much greater. By using this method, the difficulties may be overcome more gradually and discouragement avoided.

How to Study Objects. Much more will be gained by choosing one good object and drawing it many times in different positions than to choose a new object for every drawing. Quality is more than quantity, and success is the key to interest. One loves to do that which he can do with some measure of success, rather than to take up new lines of work. We learn how to catch a ball by catching it over and over, and we can learn how to draw in the same manner.

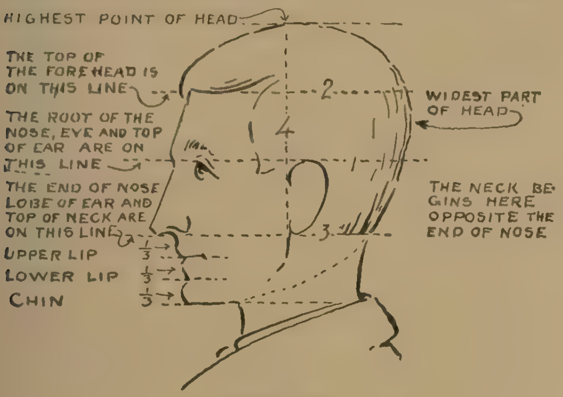

HIGHEST POINT OF HEAD
THE TOP OF THE FOREHEAD IS ON THIS LINE
THE ROOT OF THE NOSE, EYE AND TOP OF EAR ARE ON THIS LINE
THE END OF NOSE LOBE OF EAR AND TOP OF NECK ARE ON THIS LINE
UPPER LIP
LOWER LIP
CHIN
1/3
1/3
1/3
WIDEST PART OF HEAD
THE NECK BEGINS HERE OPPOSITE THE END OF NOSE
1
2
3
4

Figure 35

For example, choose an object like an acorn. First, sketch it with light lines as in A, Figure 34, and finish the drawing as in B; then draw it as in D and E. Remove the cap and draw the acorn as in F, and then the cap as in G and H.

THE HUMAN HEAD

Perhaps there is more desire on the part of boys and girls to draw the human head than any other object. It is, without doubt, the most interesting object in the world.

The first step in drawing the human head is to learn the position of each part. In the drawing, the position of each part is marked and the method of putting the part in place is given in the plainest way possible.

The general shape of the head is oval, with the small end marking the chin. This oval is divided into quarters by the three dotted lines 1, 2 and 3, and the lower quarter into thirds. Study these lines closely and find out what each one marks.

The middle line, 1, marks the root of the nose, the upper eyelid and the top of the ear.

Line 2 marks the top of the forehead or the beginning of the hair.

Line 3 marks the end of the nose, the lobe of the ear and the top of the neck.

The vertical line, 4, through the middle of the head, marks the front of the ear.

The lower quarter, divided into thirds, marks the upper lip, the lower lip and the chin. These proportions make a fairly well shaped head, and should be memorized so that they can be used without much effort. The measurements are only approximately correct, but will be found excellent aids in the drawing of the head.

Learning the Position of Each Part of the Head. The general shape of the human head is oval, as shown in A, Figure 36. Cut from cardboard an oval similar to A, three inches long and two and three-fourths inches wide. For the blackboard cut the oval from pasteboard fourteen inches long and thirteen inches wide. Of course, you may draw this oval offhand, as you will do later, but at first better results will be attained by using the pattern.

Place the pattern on the paper or blackboard and mark around it as in A. Draw the light horizontal line, 1, and the vertical line 4, through the middle of the head. This line marks the root of the nose, the upper eyelid and top of the ear as shown in B.

Line 2, half way between line 1 and the top of the head, marks the top of the forehead or the parting of the hair.

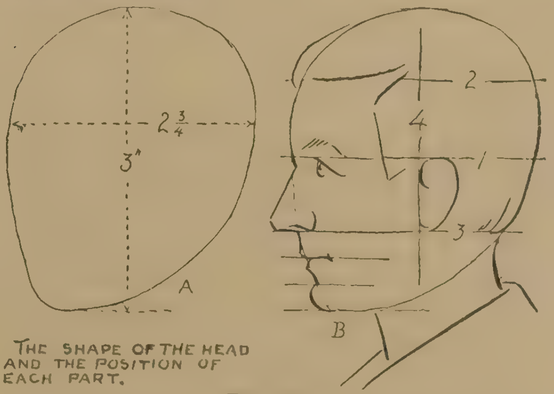


Figure 36

Line 3, half way between line 1 and the lower part of the chin, marks the end of the nose, the lobe of the ear and the top of the neck.

Divide the lower quarter into thirds, and the upper lip will be in the first third, the lower lip in the second third and the chin in the last third. This will complete the position of each part in a fairly well shaped head.

Work out the following exercises:

Draw the oval A and place the ear.

Draw the oval A and place the nose and eye.

Draw the oval A and place the ear and hair.

Draw the oval A and place the nose, eye, ear and neck.

Draw the oval A and place the nose, lips, mouth and chin.

Draw the oval A and place each part of the head.

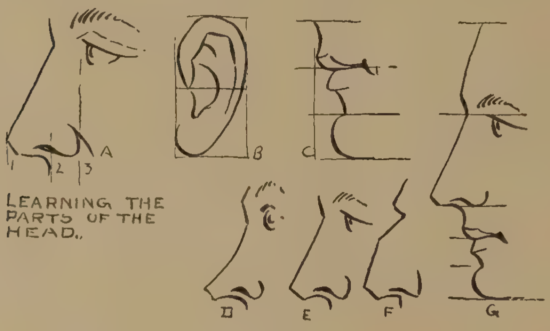


Figure 37

Learning to Draw Each Part of the Head. The next step is to learn how to draw the parts of the head: the nose, eye, ear, lips, mouth and chin.

Observe in A, Figure 37, that the distance from the end of the nose to the lip is a little longer than the distance from the lip to the wing of the nose. That is, 1-2 is slightly longer than 2-3. Study this closely.

Observe in B that the ear is about twice as long as wide, and that it is contained in two squares.

Observe in C that the upper lip, lower lip and chin are about equal in vertical space, and that the upper lip projects beyond the lower lip and chin.

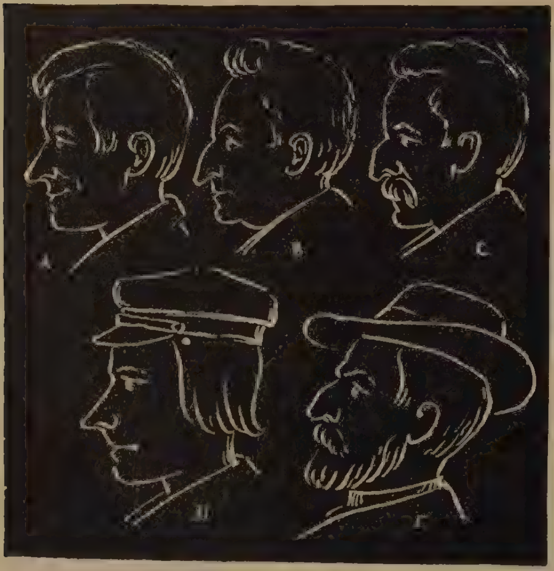


Figure 38

Draw nose A several times on paper and then draw it from memory on the blackboard.

Draw the ear B very carefully and then draw it on the blackboard.

Draw the lips, mouth and chin until they can be reproduced on the blackboard from memory. Observe that the lower lip occupies about half of the vertical space.

Draw three equal spaces and draw the face G.

Draw the whole head, making the nose like D.

Draw the whole head, making the nose like E.

Draw the whole head, making the nose like F.

Of all the millions of heads in the world, there are no two alike. The eye, nose, mouth, chin and ear differ in each one, as do the expression and proportion. But if the plan has been followed thus far, and if the head of standard proportions has been learned, as well as the position of each part, then the pattern or outline may be dropped and the head drawn without its aid.

In Figure 38 there is a variety of heads. Copy them, with the idea of learning the head more than of making a picture. Draw A carefully on paper and then try to draw it on the blackboard from memory. At first this is a little difficult, but after the parts have been memorized it becomes increasingly easy. When once the habit is formed of giving expression to our thoughts through drawing, it will be found that our powers of memory are as great in this line as in any other. In fact, it should be easier to memorize a form than a verse in prose or a process in number, because the form is more tangible. Memory drawing has almost infinite possibilities.

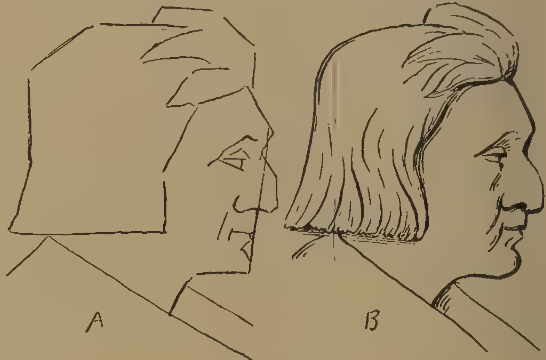


Figure 39

Drawing from the Real Head. After the head has been learned, and the positions and directions established, one may draw from the real head, or the pose as it is called. For this purpose choose a face with strong features and with marked characteristics. Mark the proportions with light lines, as shown in A, Figure 39, and then finish with heavier lines, as shown in B.

It always requires some practice to go from the copy to the real object. This is because there is

Colored Plate VII

Colored Plate VIII

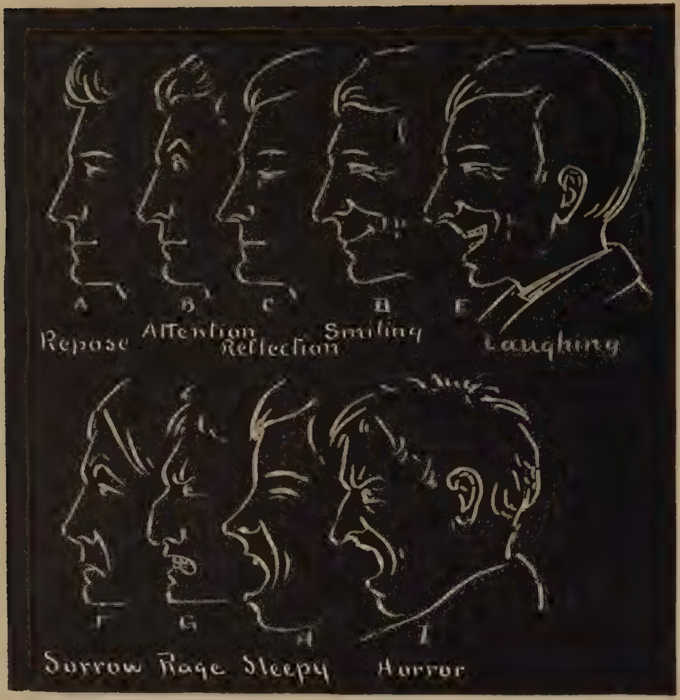


Figure 40

nothing in the real object to show you the mechanical means of making the drawing. Practice will soon overcome this difficulty, and you will learn to apply the method you have already learned with the copy.

Choose older people for models at first, as they are more patient, and usually have stronger and more characteristic faces than younger persons.

EXPRESSION

Expression depends on direction. That is, it is the direction of the lines that gives expression. For example, in repose the lines are horizontal. The horizontal line is the line of repose. In the expression repose, observe that the mouth and eye are horizontal. In attention or interest the eye is open, and in reflection it is partly closed.

In smiling and laughter the lines of the face expand and curve outward and upward and the eye partly closes.

There are only four basic expressions: repose, pleasure, sorrow and passion.

In repose the lines in general are horizontal, as in A, Figure 40. B and C are like A except the eye.

In pleasure the lines expand and the curves predominate, as shown in D and E.

In sorrow the lines are drawn down and the eye-brow is drawn upward at the inner angle, as in F.

Passion has a wide range. Discontent, envy, revenge, hatred, anger, jealousy,—there is a long line of characteristics, all of which are pictured by the angular lines. Human expression has wonderful variety, but practically all expressions are made by combining the four basic expressions, very much in the same manner as in A, B and C.

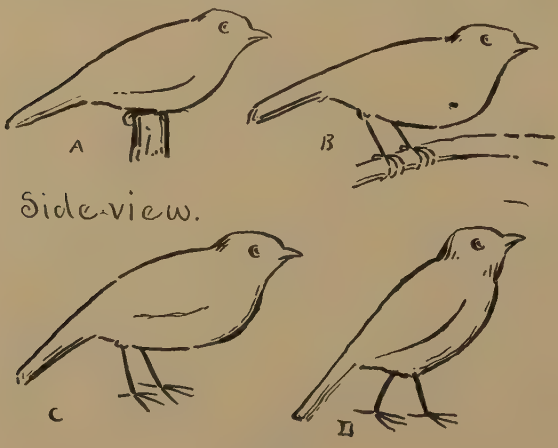


Figure 41

DRAWING BIRDS

In picture making birds are useful in adding life and interest to the drawings.

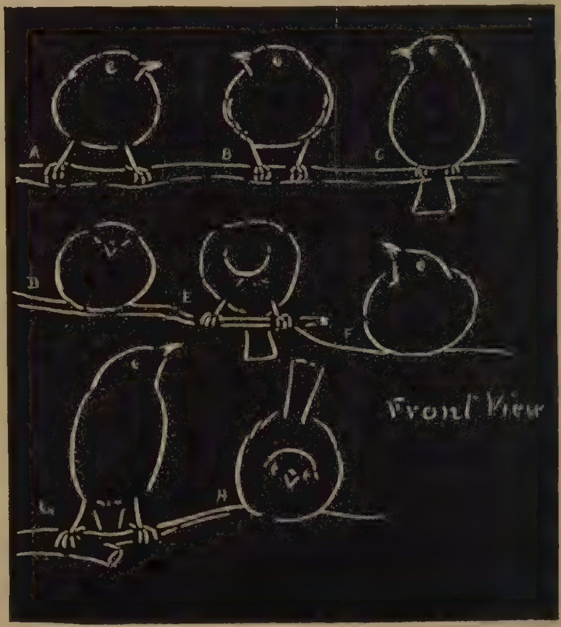


Figure 42

A general plan for the drawing of birds is as follows:

First, learn from the drawing the general form of the bird, the position of each part, the bill, the head, the tail, the legs and feet, the directions and proportions of each part.

Second, use this knowledge as an aid in drawing mounted specimens.

Third, study the real bird.

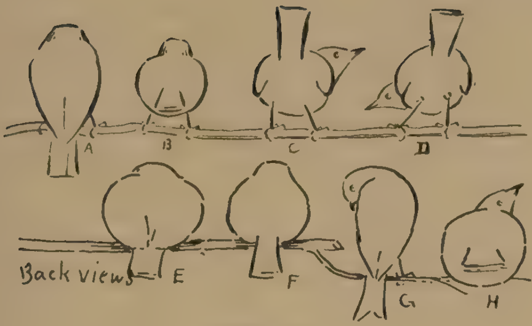


Figure 43

In Figure 41 there are four simple drawings of the bird as viewed sideways. They are intended to show the proportions of the bird and the position of each part. Observe that the general shape of the body is oval and that to this shape are added the head, tail and legs.

Your first work is to learn the proportions and the position of each part, and this is done by means of the copy.

Draw bird A sitting on the post. Draw it several times. Draw first the body, which is the largest part, and to this add the head, tail and legs. Do not begin with a small part such as the bill; it is easier to add small parts to large than to add large parts to small.

Draw bird B standing on a perch. Draw it carefully on paper and then from memory on the blackboard. Do not work for the picture so much as for the proportions and shape. Bird C is standing on the ground and bird D is walking.

The Front View. For convenience in learning, the study of the bird is divided into side view, front view, back view and the quarter views. This division introduces an orderly arrangement that is a great aid in overcoming the difficulties of learning the bird elements. The principle of construction is the same for all birds; the difference is mostly in the proportion of the minor parts and details. All birds have bills; some are long, some short, some straight and some hooked, but all are of the same general principle, so much so that to learn one is a great aid in drawing all.

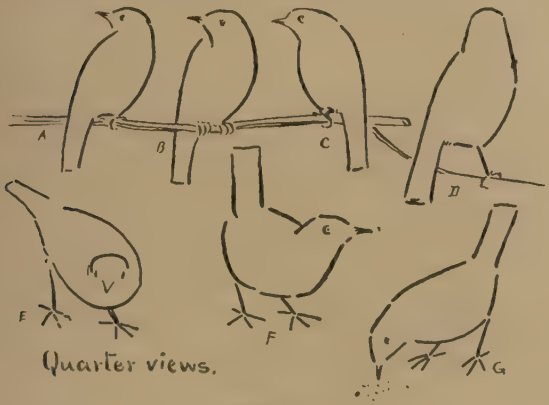


Figure 44

Observe in Figure 42 that the body of the birds in the front view is round, and that the circle may be used as a means of giving shape to the body. Draw the circle with light lines and to it add the head, tail and legs. Birds C and G are more oval than round.

The Back View. The outlines in Figure 43 are much more simple and easy to represent than the real bird. These contain only the essential features; all the little markings, the feathers and smaller details are omitted, and there is nothing left to confuse the eye, or to stand in the way of seeing the bird as a unit.

With the exception of A and G the bodies of the birds are round, as in the front view. Make a drawing on paper and then hold it off at arm's length to see if the proportions are correct.

When the drawing is on the blackboard, stand away eight or ten feet to see that each part is of the right size and every part as it should be.

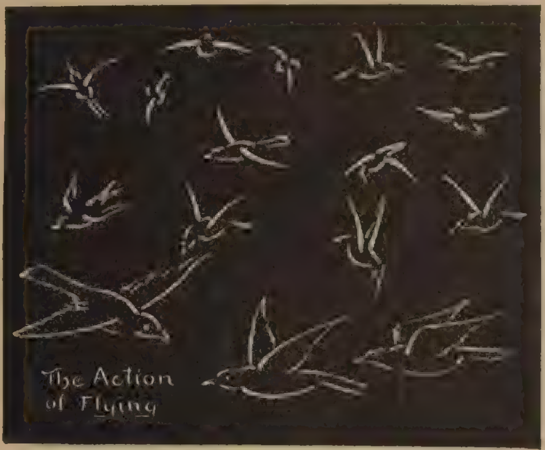


Figure 45

It is an excellent exercise to draw one of these birds back view and then draw the same shape and make it face forward. The same shape will do for both drawings. For example draw two forms similar to E and make one face forward and the other back.

Draw A with the head showing side view.

Draw B with the bird looking up.

Draw C with the head on the left side.

Draw D with the bird looking to the left.

Draw H facing this way.

Draw F with the head turned so that it is looking this way.

Draw G looking to the right.

Quarter Views. The quarter views are the most numerous and in general are the most pleasing. Figure 44 represents a few of the most common.

Give special attention to placing the feet under the bird. A bird cannot stand up, any more than a human being, if the feet are not under the middle of the body. The bird must be balanced on the feet, and this is done with the aid of the judgment alone. Study the drawing, study the proportions of the body, head, tail, and feet, study how the feet are placed under the body to give perfect balance. Study the possible movements of each part. The head can turn the full round of the circle and be placed to any part of the body. Also each part has definite movements that it is well to observe.

It is better to begin with these simple drawings than with a live bird. It is doubtful whether a beginner could make much headway learning to draw from such a restless bit of animation as the common bird, with its multiplicity of markings and endless details. It is much better to approach the task with such preparation as may be derived from these simple directions.

The Action of Flying. The lower middle bird in Figure 45 represents the typical action of flying. Learn this action and it will be found the key to all the others.

Action is a great aid in the drawing of the bird, after the general plan has been learned. It is more stimulating to represent the bird as doing something than merely to draw the bird. The action is a strong propelling force. The following are some of the most common actions, and each one may be drawn side view, front view, back view or quarter view.

Draw the bird standing; sitting; walking; running.

Draw a bird looking up; looking down; looking to the right; to the left.

Draw a bird eating; drinking; bathing.

Draw a bird singing; scolding; sleeping.

Draw a bird building its nest.

Draw a bird sitting on its nest.

Draw a bird preening its feathers.

Draw a bird "sharpening its bill."

Painting with Colored Crayons

THE Standard Colors are pure colors, which, by common consent, are accepted as such. They are red, orange, yellow, green, blue and violet. Of these colors, red, yellow and blue are called Primary Colors, and orange, green and violet are called Secondary Colors.

The Color Box, which forms the basis of these drawings in colored crayons, is an eight-color box containing the standard colors, red, orange, yellow, green, blue and violet, and in addition brown and black. This forms a color box that, with perfect colors, would be complete. It is also the easiest to teach and most practical to handle and use.

The Colors. The following facts about the colors will be found helpful.

Colors tending toward red or orange are said to be warm, and those tending toward blue or violet, cold.

Yellow more than any other color represents the element light; hence, mixed with other colors, it tends to make them lighter and brighter.

Green is neutral; mixed with yellow it becomes brighter; with blue or violet, cold; and with red or orange, warm.

Brown or black are the "modifiers" of the color box. They are to modify the standard colors, forming shades and grays.

Complementary Colors are two colors that unite in themselves the three primaries. Hence, one of the colors must be a primary and one a secondary to form complementary colors. The following are the complementary colors:

Red and green.
Yellow and violet.
Blue and orange.

It is possible with two complementary colors to make complete pictures.

The Paper. Use common white drawing paper of rather fine texture. A tablet is preferable, but if single sheets are used they should be placed in an open book to insure a smooth foundation. A tablet four and one-half by six inches is an excellent size for practice work. A tablet six by nine inches is the next size. The work in this course is planned for a pad, or tablet, four and one half by six inches.

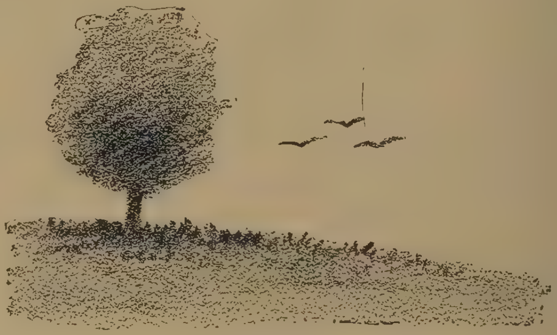


Figure 46

Holding the Crayon. When laying a wash, hold the crayon the same as a blackboard crayon, that is, between the thumb and three fingers, and wear a flat place on the crayon. When marking in details, hold the crayon the same as the lead pencil or penholder.

The Wash is a term used in water colors to indicate color spread more or less evenly over a surface. The same term is used in colored crayons to indicate the color spread over a surface. The wash is the most important mechanical element in crayon drawing. The first aim is to acquire the ability to lay a smooth, even wash, free from scratches and irregularities. Little progress in crayon drawing can be made until this ability is acquired. The first lesson is for the purpose of acquiring this ability.

Colored Plate IX

Colored Plate X

Colored Plate XI

The amount to use must rest with the judgment. The picture, the colors to use, and the order of their use is given, but the strength of the washes and their manipulation must and should be left to the draughtsman.

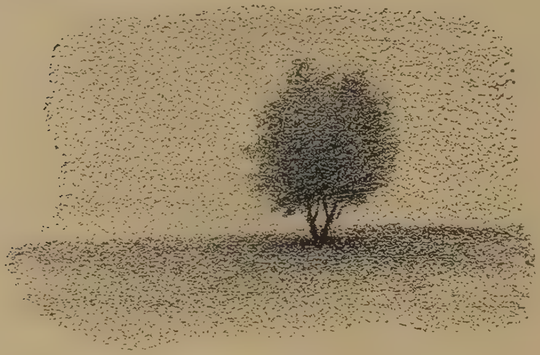


Figure 47

Painting a Landscape. Perhaps Figure 46 is as simple as can be made for a first effort in landscape work. It is merely a tree growing out of the ground. The sky is not painted but is left the color of the paper. Paint the landscape entirely with black.

With a free stroke and with no guiding outline paint the tree. Begin at the top and work downward. Paint the trunk darker than the foliage, and see that it is placed under the middle of the top.

Paint the land with the same free stroke and make the part under the tree darker than it is farther away from the tree.

Use only one color for first efforts. Make the painting about five inches long and about three inches wide. This is as large as can be managed at first.

Colored Plates I and II, painted with red and blue, are the same subject. These are painted about the size that beginning pupils can handle to the best advantage.

Paint the picture first in black, and then in red; then follow with blue, and lastly with brown.

Figure 47 is like Figure 46 except that it contains a sky in addition to the land and tree.

First paint the sky with a light free stroke; then paint the tree top, following with the tree-trunk, and finally with the land.

Do not at first require children to paint to a margin around the drawing, as that tends to cramp the freedom of the stroke. Make the strokes long, as long as two or three inches for the sky, and shorter when representing the foliage of the trees.

Paint the drawing entirely with black; then follow with one entirely with blue. Paint still another entirely with red and perhaps another with brown.

House, Land and Tree. You can place a margin around the tablet by using the second, or long finger as a guide, or you can use a ruler and a light pencil line and then strengthen it with the crayon.

Draw the shed or house and mark in the land and tree with light pencil lines. Paint the large washes first; that is, place an even wash over the house and ground before adding any of the details. It is the broad washes that make the picture; the little details, though interesting in themselves, do not have much effect on the picture as a whole.

Paint the whole picture with one color, say with black. Then draw another and paint the shed, tree and ground with red. The sky may be left the color of the paper, or it may be painted the same as in the drawing. A good way is to place the general wash on the shed, ground and tree, striving to give to each their correct value, and then adding the details. The sky may be added last if so desired. This drawing may be painted with black, with brown, with red, with blue or with violet. Yellow, orange and green are hardly strong enough to paint an entire picture without the aid of a stronger color such as brown or black.

Painting with Two Colors. After some power has been gained with one color, two colors may be used. Figure 48 is a very good example for first efforts with two colors. We will paint it with the complementary colors yellow and violet.

With a very light pencil line mark the division between the sky and the land. Place a wash of violet over the sky and let it overlap the land somewhat, blending into it. Then place a wash of yellow over the land, letting it blend into the violet. Let the yellow wash be strong and vigorous. With the violet crayon and a vertical stroke, mark or wash in the distant wood, blending it into the yellow wash. Add the details to the foreground with the violet crayon. If the landscape looks crude go over the foreground with the yellow crayon and blend the places that seem harsh.

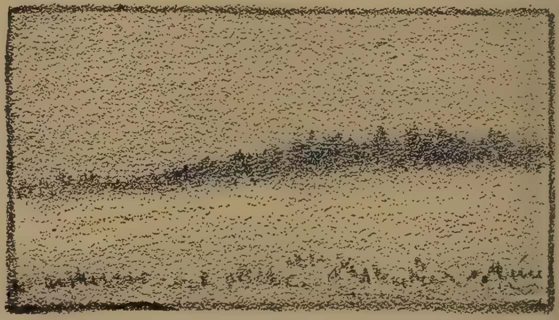


Figure 48

Colored Plate V is painted with the same colors and in the same manner as given above and shows in nearly full size how the work is done.

The same picture may be painted, and in the same manner, with the complementary colors blue and orange. Paint the sky blue and the ground orange and then blend them together as shown in Figure 48. Colored Plate IV shows how a landscape may

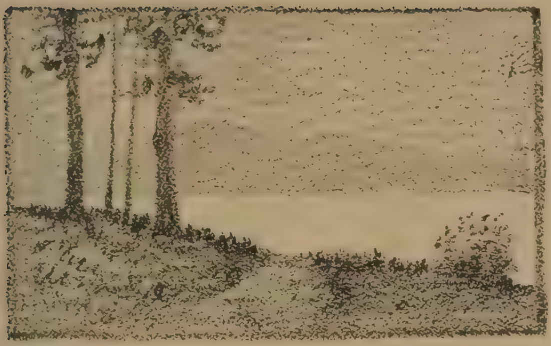


Figure 49

be reversed. Both are painted with the complementary colors yellow and violet. In one the sky is violet and in the other yellow. The land and tree are violet over yellow, that is, one wash painted over the other. In the same manner the colors in Plate V may be reversed. A landscape painted with the complementary colors blue and orange may be reversed in the same manner.

Figure 49 is an excellent example for two colors. It may be painted with the complementary colors blue and orange as follows: Paint the sky down to the land of the foreground with a light wash of blue. With the ruler and a light pencil line, mark the horizon line, which is where the water and the mountain join. Paint the mountain with the same color. Paint the foreground and trees with a strong wash of orange and into this wash paint the details with blue.

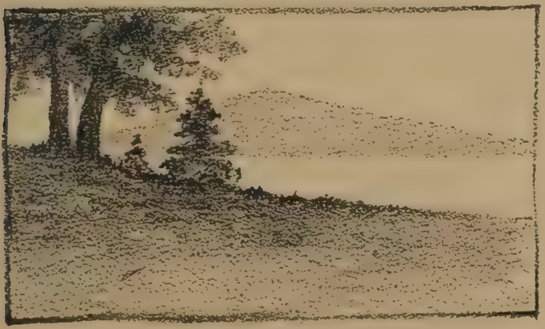


Figure 50

Colored Plate V-a is a similar drawing, showing how it appears in color. It is painted with blue and orange.

The same drawing may be painted with yellow and violet and in the same manner, by substituting the violet for the blue and the yellow for the orange.

Figure 50 is similar to Figure 49 except that the trees and values are different. Colored Plate V-b shows the drawing painted with the complementary colors blue and orange, the same as Colored Plate V-a, only the colors are reversed. It may be painted in blue and orange as follows: Place a strong wash of orange over sky, mountain and lake. With a ruler and a light pencil line, mark the horizon line; paint the mountain with blue and then tone it down with orange. Place a strong wash of orange over the foreground and over it paint a wash of blue. Make the foreground strong in color and use both blue and orange for the details.

The landscape may be painted with yellow and violet in the same manner, using the violet in place of the blue and the yellow in place of the orange.

A Snow Scene. Figure 51 may be very effectively painted with black with a few added touches ot brown in the tree-trunks and rabbit.

The picture may be painted with the complementary colors blue and orange, as follows: Paint the sky, distant wood and the tree-trunks with blue, and grade the blue into the snow of the foreground. Work some orange into the tree-trunks, making the orange predominate in the nearest one. Paint the rabbit in the foreground with orange and the details with blue.

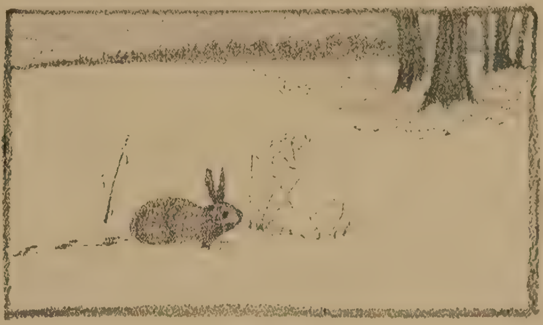


Figure 51

Colored Plate III is painted with the complementary colors yellow and violet; Figure 51 may be painted in the same manner and with the same colors. Blue and orange may also be used in the same way.

Colored Plate III is painted with the colors yellow and violet. Place a strong wash of yellow over the sky and extend a light wash of the same over the land part to make the over-wash of violet less

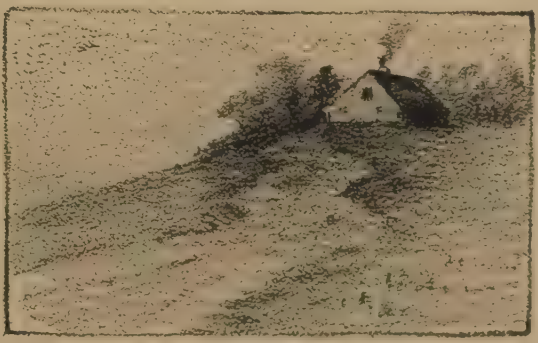


Figure 52

sharp. Paint the distant wood with violet and blend it into the middle distance. Paint the tree in the foreground with violet and yellow.

Figure 52 is a very pleasing landscape. Paint it at first with one color such as black, to overcome the mechanical difficulties, after which it may be painted with any of the complementary colors.

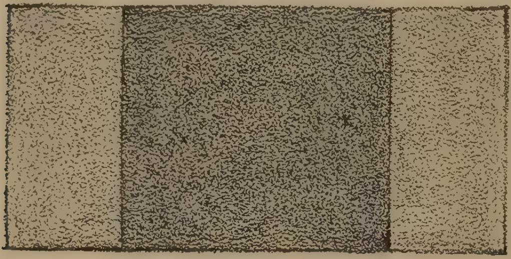


Figure 53

Paint it with the complementary colors blue and orange as follows: Place a wash of blue over the sky and a wash of orange over the trees, house and land. Paint the trees with a heavier wash of blue as also the roof and side of the house. The darker parts of the hill and the details may also be painted with blue. Add such correcting touches as may be necessary with both blue and orange.

Painting Rugs. Figure 53 represents a very simple rug in three parts. The middle part is called the center, the two ends the border and the edges the margin. Paint the rug first with red and then with brown, being careful to blend the margins so they will not be too abrupt.

It is well for purposes of drill to paint two rugs with the same color, painting one dark and the other light. The dark washes are much more difficult to handle than the light washes; this is because they are more difficult to keep clear. A dark wash needs to be carefully gone over with the sharpened point of the crayon.

The rug may be painted with the complementary colors red and green as follows: Place a strong wash of red over the whole rug. Carefully blend in the margins with the sharpened crayon. Go over the center with a strong wash of green, making the wash smooth and even with the point of the crayon.

Reverse the process. Place a strong wash of green over the whole rug and a wash of red over the center. The rug may also be painted in the same manner with blue and orange, yellow and violet, and also with the secondary colors, green and orange, green and violet, and orange and violet.

By means of stripes and bands, rugs may be made of great variety and the plan extended to blankets, pillows, cushions, portieres and similar objects.

Colored Plate VI represents a complete landscape, that is, it contains a sky, distance, middle distance and foreground. It is painted with blue and orange, thus; First, place a wash of orange over the foreground and tree, then a wash of blue over the sky and water, adding the mountain with the same color. Place a lighter wash of orange over the middle distance and finish it with blue. The foreground is finished with both orange and blue, gradually working in the details with the sharpened crayon.

This landscape may be painted with yellow and violet in the same manner, or with black and brown. When painting with black and brown, use black for the sky and distance, brown for the foreground, and combine the two for the middle distance.

Colored Plate VI-a is a very simple picture, painted with the complementary colors yellow and viotle. It is painted as follows: Place a strong wash of yellow over the land and trees, then a wash of violet over the sky. Into these two washes paint the details with both yellow and violet.

In the same manner the picture may be painted with blue and orange, also with black and brown, using the black for the sky and the brown for the land.

Paint the landscape with blue and orange as follows: Place a heavy wash of orange over the sky and a heavy wash of blue over the land and then make the details with both orange and blue. This method is similar to Colored Plate VII.

OBJECT PAINTING

Objects suitable to paint in colored crayons should be simple in form and color, free from small details, and broad in the masses. Little parts should be avoided as well as objects of many colors. Colored crayons are not adapted to fine details, but rather to broad masses of light and shade.

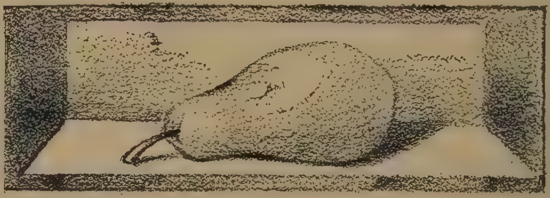


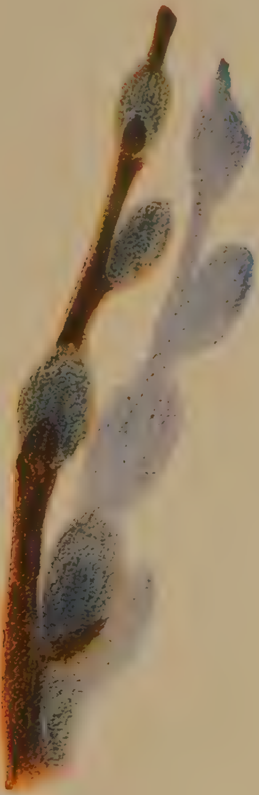
Figure 54

Place objects such as fruits, vegetables, nuts and similar models in an L-shaped background, made by folding once a sheet of the same kind of paper on which the drawing is made. Figure 54 shows the L-shaped background with a pear placed ready to be drawn.

The following objects are suitable as models to be painted with colored crayons:

Grasses and similar growths, such as the clover, flax, sorrel, alfalfa; rushes and grains; weeds of simple forms, and the sprouting pea, bean, corn and grain. Pin the model to a paper background that is like the paper on which the drawing is made. Color direct with very little drawing and with only a light pencil line to mark the directions

Colored Plate XII



Colored Plate XIII

Colored Plate XIV

and indicate the position of the parts and to show the proportion.

Buds and Leaves. Colored plates XII and XIII show the correct form in preparing the models. One, two or three buds or leaves on a stem is enough. Confusion is often caused by too many parts. Choose leaves with smooth edges, like the lilac. In the choice of a model remember that "simplicity is the supreme excellence."

Fruit and Vegetables. Choose these objects of a distinct color. A banana is a typical object, of one color, characteristic in form, and of convenient size. A yellow, red, or green apple or a ripe tomato is also typical. Place the objects in an L-shaped background and paint both the object and its shadow. Colored Plate XIV shows an excellent model. Draw one, two, or three in a group, as more will be found confusing. Colored Plate IX is a good example of a group. Apples, pears, plums, peaches, currants, gooseberries, cherries, grapes, lemons, oranges, radishes, carrots, cucumbers, pumpkins, gourds and prunes are all good if well chosen.

Flowers. Flowers should be of one color, as the buttercup and the violet. The dandelion in Colored Plate X is a fine example. If the flower is of more than one color, then the colors should be distinct and separate, not blended together or so complicated as to confuse the painter. It is better to draw and paint single flowers at first until some power has been gained. Remove from the model all parts that are confusing. Buttercups, pansies, poppies, yellow marguerites, sunflowers, sweet peas, dandelions, iris, anemones, violets, geranium, narcissus, rosebuds, water-lily buds, and many others may be used.

Birds. Mounted specimens are necessary, as a learner could hardly draw from as animated an object as a live bird, which is changing its position every moment. The models should be of one color, few markings and of simple form, like the bluebird, yellowbird, blackbird, oriole, robin and blue jay. Butterflies of simple markings are very good.

Trees. Trees are among the finest of models, not only because they are interesting, but on account of the freedom that may be exercised in the painting of them. Aim for the general form and color. Avoid details. For first efforts choose a tree of thick foliage and standing alone with the sky or water for a background. Draw and paint the tree a number of times rather than skip from tree to tree. Do not stand close to the tree when painting it, but far enough away to eliminate the details, such as the leaves and smaller limbs. The maple is an especially good tree to paint, and so are the thorn, the elm and the apple.

Bits of Landscape. Look for single objects and for plainness of background. Look for the big truths such as general color, form, value and character. Minimize the little details that surround the object. Remember, you do not have to represent all that you see, but only those parts that you want to show in your picture. Ask, "What do I wish to represent?" Answer the question, and then act. The following will suggest what to look for: A stump, a log, a large stone, rocks, a bunch of grass or rushes; corner of fence, an old trough, gate, bars; an old mill, tower or bridge; a footbridge, a bend in the road; a shock of corn, wheat, oats or flax; the end of a wharf, a boat at anchor, a buoy; any object projecting from the land into the water, such as a point of rocks, an old tree-trunk or a point of land; an old barn, shed or shanty.

Common Things. Objects should be free from decoration, of simple form and of marked color, and if of more than one color they should be separate and distinct. Place against a background of a color as near like the paper on which the painting is made as possible.

Bright colored pottery, especially stoneware, Japanese lanterns, such as those in Figure 55, bright, yet plainly dressed dolls, freshly baked biscuit or bread, a new berry, peach or grape basket and similar objects, make very good models for painting.

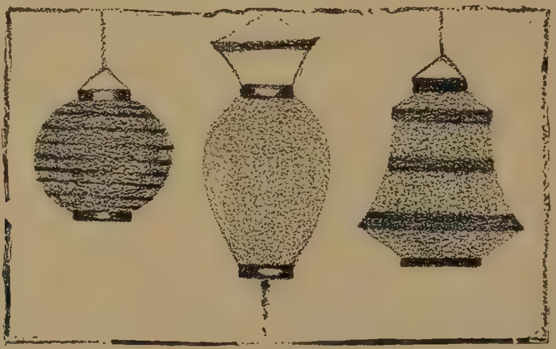


Figure 55

Pictures for Children to Know

With Introductory Article by FRED H. DANIELS, Director of Art, Newton, Mass.

Interesting Children in Pictures

WE SEE in pictures only what we bring to them. This is a point of great importance to mothers in attempting to interest children in pictures. It means, first of all, that we must select pictures which have in them things in which children are naturally interested. Pictures of children or animals, pictures with movement and action in them, offer to the child some peg to which he can fasten himself or his imagination. He knows children, and animals he knows and loves, and his whole personality is restlessly active. The world of landscape is a blur to his mind, as a rule. It was almost untouched in the world of art until about a hundred years ago; it was a blur to the human race up to that time, otherwise it would have been more adequately painted. Therefore, it would seem that the study of pictures which are classed as landscapes would better come later in life.

Temperament has a good deal to do with one's enjoyment of pictures. A robust boy will grow enthusiastic over pictures of a nature which would cause the timid little girl to draw away from them. And the picture for the little girl will not do at all for the boy. He scoffs at it, and with as much right as he would at a proposal to play dolls. No adult has a temperament elastic enough to enjoy all the good things in the world. The boy is right in his choice, and so is the girl; both kinds of pictures are good, and Mother Nature must take the blame if we hold that all people should like what we like.

Children play tag, basket-ball, baseball, and other live games. Adults play chess and auction. Children love brilliant colors, adults prefer quieter hues. Emerson says that the untrained mind sees and enjoys only "lampblack and lightning." We must leave the subtle pictures until later life and select those which are vigorous in line, mass and color, those which are strong. And by all means choose a picture in color in preference to a black and white print, if it is possible to obtain a good colored picture. In this connection it may be wise to suggest that many of the illustrations in color in current magazines and children's books are wonderfully good, and a hundred times better than famous portraits of foreigners a hundred years dead. If your children read Milton, Chaucer and Bacon, you may introduce them to Rembrandt, Velasquez and Michael Angelo, but not otherwise.

In the modern school study of geography, the work is begun with a study of the schoolroom, then the school environs, the town, the state, the United States, and last, the foreign countries. In picture study, American people and things are to be given preference over European, other things being equal.

Children bring something to the picture, and as we have said, they see in the picture just what they bring. This is very little. It remains for us to help them to see more. How are we going to do it? The first thing to be sure of is that we, ourselves, see more. We should not attempt to interest children in a picture until we are interested in it. Most people see about as much in a picture as they do in a ride through the country. We must ride over a route many times in order halfway to know it. We must sit patiently before a picture many times before we shall be able to see what the artist is trying to say and how he says it. Then when we have our own lesson prepared, we are ready to begin with what the child already knows, and little by little lead him to some of the interesting things which he has not thought of as being a part of the picture. You will notice that "interesting" things is the term used. Do not imagine that the child cares anything about uninteresting things. If you want to kill any possible love of good pictures, choose uninteresting ones, cover over with an abundance of the dry bones of art and history, and there can be but one outcome. Let us not forget that "Delight is the soul of art." Your picture story study hour is a success only when the child and you are both sorry that it is over.

And now what is it that we ought to lead children to see in pictures. Primarily, the artist is a man (or woman) who sees better than other people. This is his first business, to learn to see. And all his life he is learning, and no one knows better than he that the task is hopeless. He uses his eyes constantly, watching forms, lights and darks, beautiful lines, and color effects, always and forever storing the images of these things in his mind to be called upon at some future time. All the time his power is growing, and when we have the masterpiece before us we know that in it is written the sincere effort of years. Before such a record we can afford to sit humble, and learn. So first let us call attention to the many things in the picture which the artist has seen unusually clearly.

The artist's eyes never have a vacation. Whenever possible he endeavors to reinforce his memory by using his hands in drawing or painting, for his hands must strive to perfect themselves that he may record what he sees. We do not know what a mile is until we have walked a mile. We do not know what a beautiful curve is until we can draw one. Probably you won't believe the latter but it is true. Don't ask an art critic, ask an artist. We must note, second, how well the artist has learned to draw and paint what he sees.

During all these years of experience in seeing and drawing the artist is finding out what is beautiful and what is not. This is a distinction which it is not possible to make except by study. When we have before us a picture which those who know say is good, we ought to accept their judgment. Perhaps to us it is not beautiful; that is not the fault of the picture, it is merely our misfortune that we cannot comprehend its beauty. If we go so far as loudly to proclaim that we do not like the picture, such proclamation does not hurt the picture, it is merely a record of our picture intelligence at the present time. Third, then, we will agree that artists know more concerning beauty than we do.

There is no such thing in nature as perfection, the ideal from an artist's point of view. There is no such thing as a perfect human figure or a perfect landscape. Man has always tried to improve upon what nature has offered. The potatoes, apples, horses, houses and most everything else that we have are the results of this attempt to improve upon nature. And, for our purposes, we have improved nature, or improved upon what nature has to offer. Our early ancestors lived in caves, we live in houses. We took nature's suggestion as to shelter and in time made the improvement. So the artist is constantly studying nature to see what the possibilities for improvement are, and in the picture we never find merely an imitation of nature, but always an interpretation. This interpretation is always a revelation of the beautiful ideal which nature many times suggests, but never quite presents. We all know that this is true in literature. All the arts are alike; they differ only in the means of expression. Fourth, we will endeavor to appreciate nature perfected for beauty's sake.

Art is art, just because it is not nature. Art is a beautiful record, or a record of beauty, or both. Let us find out why this picture which we are to talk about with our child, is beautiful. Fifth, we must believe that the artist painted the picture because the ideal to him was beautiful, and because he wished us to enjoy with him the thing which he has spent his life learning to say. Other pictures by the same artist will help very much, because all artists have a somewhat restricted line of endeavor. It takes a lifetime to learn to do one thing superbly. Beauty has many manifestations. Are the works of this painter beautiful because of their color, or their lines, or their masses, or the children or animals, or the arrangement of these things, or because of their strength or delicacy, or what? When we know, *perhaps* we can help the children to understand.

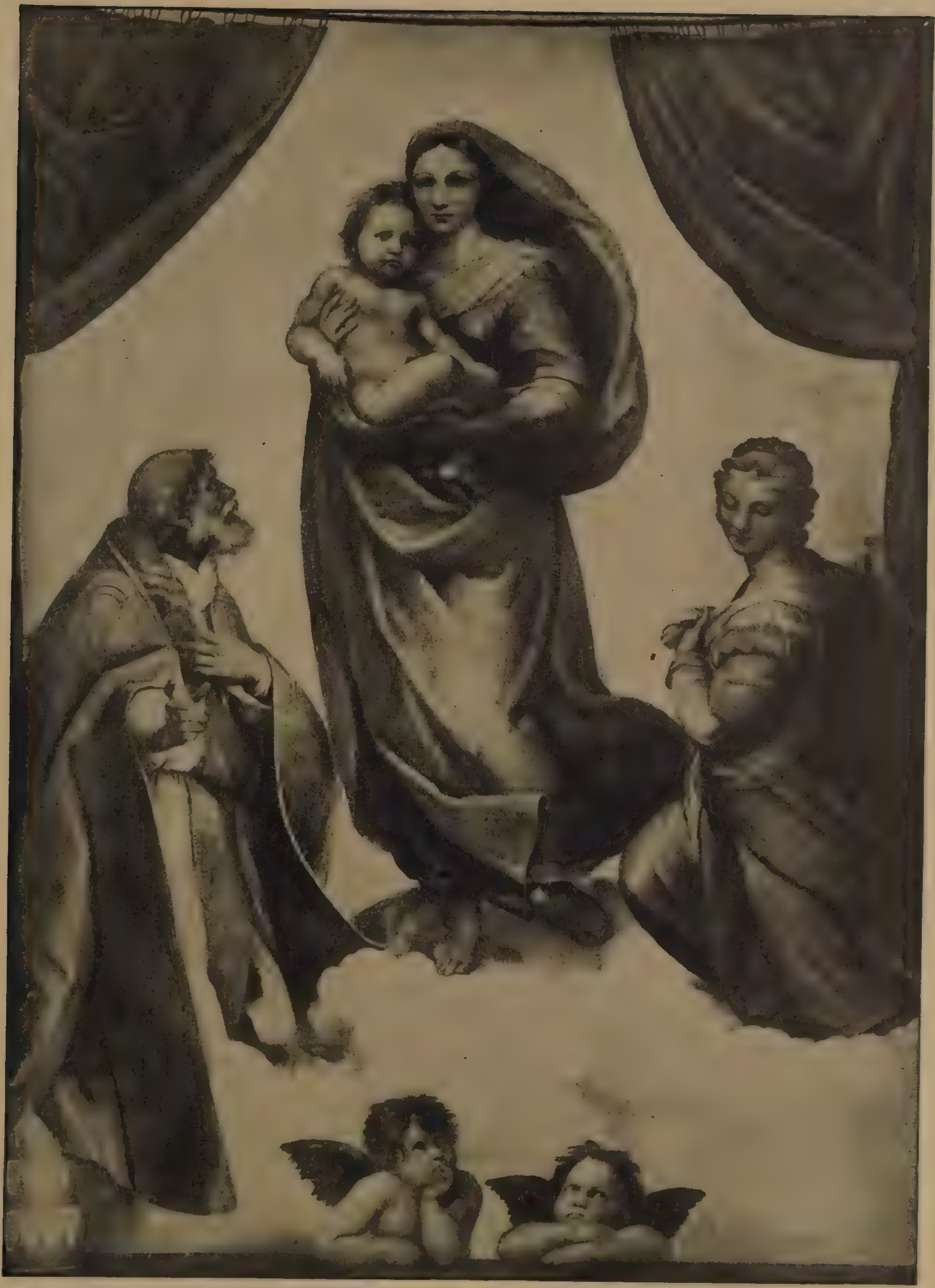
"The Sistine Madonna"

THE most famous of all Madonnas is the ''Sistine Madonna'' by Raphael. Here we have in its fulness an example of what the highest art means; one grand idea given with such force as to make a profound impression, deepening through the centuries. The world owes to Raphael the harmonious blending of the physical and spiritual in our present conception of beauty.

His beauty is always ennobling and elevating. It is said that in his presence all discord and envy were banished simply by the unsullied purity of his personality. His life was a short one, but no life was ever more successful, honored and productive, the amount of work he produced being almost unparalleled.

The ''Sistine Madonna'' is the best known of Raphael's easel paintings. In order to get the full meaning we must know the original intention of the work. It was painted for the monks of Piacenza as an altar piece, measuring ten feet in height by seven in width. In early days, when the great mass of worshippers were unlettered, religious truths were taught largely by means of pictorial art. Imagine the somber light of the church, the hush of reverential awe, the subdued tones of the choir, and the low murmur of the responses; the altar curtain is drawn aside, the

It is better to know art through reproduction than not to know it at all. It is only the best that can bear reproduction, and a good reproduction is a better preparation for the enjoyment of the original than a thousand pages of art criticism. To go from a photograph of the Sistine Madonna to the painting itself is to have a dream come suddenly true with magnificent distinction. It is to see beauty in full sunlight after many twilight glimpses.—Art Reproductions.



SISTINE MADONNA

Raphael

majestic figure of the Madonna seems to be stepping toward them out of the clouds. No wonder that the believers gazed in speechless adoration at the scene and considered the artist touched with a spark of celestial fire.

The picture consists of two phases: the foreground, with the ledge of the altar at the bottom and the looped-back curtains at the top is material; the rest of the picture is the spiritual phase, on the clouds, in the air, spirit transcendent over matter. Of the heavenly host in attendance on the Virgin, the two cherubs have arrived first. With clouds at her feet and an angelic host as far back in the distance as we can see, the Holy Mother with the Child in her arms occupies the central position. The figure of the Virgin is superb in its perfection, proportion, and well-ordered movement. The harmony of color delights the eye; the robe is of blue, the vest crimson and gold; the drab headdress and transparent scarf complete the color scheme. The slender, graceful Santa Barbara kneels at the left, praying for her people, her head averted as if dazzled or awe-struck by the radiance of the heavenly visitor. Her face is one of great spiritual beauty. At the right Saint Sixtus, Bishop of Rome for one year, is standing with upturned face as if pleading for his people. The aged saint, the young Madonna and Child, and the martyred Barbara form a wonderful group in composition, giving us variety and harmony of physical proportion as well as of spiritual endowment. In form the group is pyramidal, the head of the Madonna forming the apex, the side figures balancing each other. The figures stand out in life-like reality against the background of clouds; they, with the curtains, serve to cut off the light at the sides, making the center of light strongest behind the Madonna. Two beautiful boy angels below lean upon a parapet, with supreme adoration on their faces. The picture is now in the Dresden gallery, where it has a room to itself.

The artist was born in 1483 at Urbino, Italy. He probably inherited his fondness for painting from his father, who was an artist and in whose studio Raphael painted when a boy. Raphael's own mother died when the child was only eight, and three years later the father died, leaving him in the care of an uncle, Bartolommeo, a priest.

After living with this uncle about a year, the boy was sent to study with Perugino, an artist. Even at that age Raphael showed great talent, and it is said that when Perugino saw his sketches he exclaimed: "Let him come as my pupil; he will soon be my master." Raphael and his teacher became very close friends and worked together.

When the young artist was only seventeen he painted a picture of the Virgin that years later sold for twelve thousand dollars, a large sum for an artist's first work. About the same time he painted a picture only seven inches square which, in after years, brought sixty thousand dollars. When Raphael was in his twenty-first year he left Perugino and went to Rome. He was a man of fine character and was loved by everybody. He is described as having "chestnut locks falling upon his shoulders."

As a painter, Raphael employed a large number of artists whom he helped and instructed and who were devoted to the master painter. He was always ready to help a fellow artist, though a stranger, leaving his own work to do so. When he left his studio to go to court he was always surrounded by a crowd of artists who were glad to show him honor in this way. It has been said of Raphael that he was "the only very distinguished man of whom we read who lived and died without an enemy or a detractor!"

Raphael, by the time he was thirty-one, was a wealthy man, and built a beautiful home in Rome, near the Vatican. Only a part of the basement of his home remains, and it has been made into part of a palace which now stands on that spot.

Raphael was not only a painter, but an architect and a sculptor. He loved and wrote poetry and was a great student of history and philosophy as well. The artist died when he was only thirty-seven, leaving the "Transfiguration" unfinished. Perhaps it was his constant work on this picture that hastened his death. He left two hundred and eighty-seven pictures. Raphael is best known by his Madonnas, more than forty in all. The "Madonna della Sedia" (Madonna of the Chair) is a widely reproduced painting by Raphael. Others that are well known are "The Coronation of the Virgin," "St. Cecilia," "St. George Slaying the Dragon" and "St. Michael Attacking Satan."

—*Letitia Kirkbride*

"The Arrival of the Shepherds"

ONE OF the best known of the Nativities of modern painters is the "Arrival of the Shepherds," painted by Henri Lerolle, in 1883. It is a very simple, direct conception that is treated in a strikingly original way.

A miraculous light entered the cave with the Virgin Mary and it is said to have remained there day and night while she remained. This is shown by Lerolle. He has the strongest high light near the Christ Child and around the head of the Virgin. Around the chests and faces of the shepherds is reflected light.

This picture is full of diffused light, making a strongly felt atmosphere. The atmosphere acts as a veil, softening hard outlines and graying the brilliant lights and shadows.

The distances are well spaced, leaving room for the spectator to step into the stable and stand aloof from the sacred group. Lerolle has painted

Worship of the Wise Men Hofmann

Flight into Egypt Plockhorst

Glad Tidings of Great Joy Plockhorst

Madonna Adoring Divine Child Correggio

Lerolle

The Arrival of the Shepherds

Hofmann

Christ and the Doctors in the Temple

Correggio

The Holy Night

Da Vinci

The Last Supper

a similar space in his picture, "In the Organ Loft," making the guest feel that he is expected to stand with the choir and listen to the soloist.

The scene of the "Arrival of the Shepherds" is in a rude, underground stable, very primitive in architecture. In the middle distance is the blessed Mother and the Infant. Joseph is a little to the right. They seem to be sitting on tied bundles of hay or straw. At the left are four shepherds attended by dogs, who are crouching behind.

The delicate figure of the Virgin with bent head offers strong contrast to the rough figures of the shepherds who stand filled with awe and wonder. The shepherds, are clothed in the skins of animals, except one who is in a draped garment. He is bending forward as if about to speak. The raised hand emphasizes the feeling with which he is moved. The younger shepherds, one on tiptoe, are peering over his shoulders. Their faces are filled with the sublimity of the scene. Adoration is portrayed by the kneeling shepherd.

Joseph has turned to look at them. Even the faithful ass looks at them. In the Vulgate you will find this quotation referring to the Son of God: "He shall lie down between the ox and the ass."

The artist has well expressed the wonder and reverence shown by these men of the hills as they stand, not daring to approach the sacred group. A sense of reality pervades this entire scene.

The effect of the light is one of the strong characteristics of the picture. The light does not radiate from the son of God, yet it seems supernatural.

Henri Lerolle was born in Paris in 1848. Very little information about his life can be found.

Lerolle paints landscapes, interiors, religious scenes and many views of peasant life. His figures in outdoor life are set in luminous, clear atmospheres filled with reflected light.

Born of wealthy parents, he painted only when he felt like it. His favorite subjects are few figures and large landscapes made with a few light and dark masses drawn with great skill.

He received a first class medal in the Salon of 1880 for his landscape "In the Country," which is a masterpiece now hanging in the Luxembourg Museum, Paris. "At the Organ," painted in 1885, is in the Metropolitan Museum, New York. "By the Riverside" is in the Boston Museum. "The Potato Gatherer" is also in a Boston gallery. Lerolle's paintings have many admirers in America, and are scattered about in private galleries. "The Shepherdess" received a medal and was bought by France. It also hangs in the Luxembourg Museum.

About twenty-five of his canvases belong to private collections. Among these are the less familiar paintings: "Flight into Egypt," "Evening," "Edge of the Woods," and "Among the Open Fields."—*Anne Dillon Durr.*

"Christ in the Temple"

HEINRICH HOFMANN, the artist who painted this picture, was born in Darmstadt in 1824. He traveled much, finally settling in Dresden. His many beautiful scenes from the life of Christ are well known.

This one picture, "Christ in the Temple," or as it is sometimes called, "Christ and the Doctors," has made him famous. The head of Christ is a famous picture itself, and is known as "Hofmann's Head of Christ."

In this picture the face of the boy Christ is not one easily described. It radiates all that is good and pure and true. Quite naturally, he forms the center of the group. The fire and luster of his wonderful, dark eyes show divine intelligence. The high brow, clear complexion and the delicate features of the perfect head are in accord with the graceful figure and the commanding presence. His white garment seems symbolical of the purity he teaches, and the halo a fit setting for that divinely inspired mind.

To the right is an old man rich in learning, resting on his staff. Shrewd with years, he seems ready to discover any false idea or teaching.

Next to him is a mild-faced, honest philosopher, with hand outstretched, seeking information. In the foreground, with the Book upon his knee, sits a sage marvelling at the childish wisdom; comparing what he reads with what he hears.

To the left, with his hand absently stroking his beard, is a deep-thinking scholar. He is wondering if he hears aright. Can it be possible that this child interprets that which he cannot understand? His deep eyes are full of solemn thought.

Just behind him is a man who seems to doubt, and is inclined to ridicule the speaker, but he too is deeply interested.

The whole picture seems full of warmth and life. One almost sees the Christ Child breathe. His earnest face is full of love and divine inspiration. Without much imagination we find words expressive of his gesture.

The composition is good, the grouping well balanced, the setting most appropriate. The handsome chairs, the velvet hangings, the garments, and even the heavily bound, Book bespeak luxury.

Much attention has been given to detail. Each figure is complete. Each would make a study by itself. The expression on each face is intense. The position accentuates the expression. Different ages are represented, but none so youthful as the Teacher himself. There is a softness and elegance about the garments; one is of heavy velvet, another of silk; all more expensive and none so simple as that of the Christ's own dress.

Meekly, yet with wisdom, he is answering the difficult questions. He is surely the Christ.

—*Agnes Daniell Dodson.*

INFANT SAMUEL

"The Holy Night"

THIS picture is called "The Holy Night" and "The Adoration of the Shepherds."

We all know the story of the birth of Jesus; how Mary and Joseph, coming to Bethlehem to be taxed, found the inn crowded and were forced to seek shelter in the stable. The new-born Child was wrapped in swaddling clothes and laid in the manger, with hay for His bed. Then the angels appeared to the shepherds there on the hillside, and the great star guided them to where the young Child lay.

Correggio has painted this story for us. We see the girlish mother bending over her Child, who is cradled in the hay. His head rests on His mother's arm, while her right hand lovingly holds Him close. About the little body the swaddling band lies loosely. From the Child streams a wondrous light, illuminating the face of His mother, as well as the rude cradle, the beams of the stable door and the faces of adoring angels and shepherds. Behind Mary are seen Joseph, and the ass on which Mary rode; and beyond, the dawn shines in the sky.

Antonio Allegri, born in 1494, was the son of a spice merchant in Correggio, Italy. At that time a man was often called by some nickname, or by the name of his birthplace, so when Antonio went to Parma he was called Antonio Allegri da Correggio, or Antonio from Correggio. Finally the name became shortened, and now we speak of the artist as Correggio.

He began to paint when he was young, as there is a picture in the Franciscan convent on the island of Capri painted by him when he was only nineteen years old.

Correggio was very original in his art, and was the first to decorate the domes of churches.

He made a very careful study of the bones and muscles of the human body before he studied painting, and was among the first to introduce "foreshortening" into his pictures. Of course, this was a thing that was new to the people of the time and was not understood by most of them.

Perhaps Correggio's greatest talent lay in his being able, apparently, to surround his figures with light, so that they seem real, and to paint with wonderful color effects. His figures are always full of life and motion. He did not care so much for beauty of face in his paintings, but strove to give his figures the look of happiness. His painting of hands and hair was especially fine and often redeem a picture that may not otherwise be pleasing.

This artist's work was confined almost entirely to religious paintings and mythological characters. A great many of his pictures were mural decorations, that is, they were painted directly on the walls and ceilings of convents and churches.

Other paintings by Correggio besides "The Holy Night," are "St. Catherine Reading;" "The Marriage of St. Catherine;" "Cupid Sharpening His Arrow," a detail from a larger picture; "The Madonna of St. Jerome;" "St. John the Evangelist;" and "School of Cupid." Every important gallery of pictures in Europe contains one or more of Correggio's paintings. "The Holy Night" now hangs in the Dresden gallery.

—Bess Bruce Cleaveland.

"The Last Supper"

IF WE open our Bibles to Matthew XXVI and read verses 21 and 22, we have the narrative selected by the artist for this picture, "The Last Supper."

It is a wonderful picture, showing as it does the astonishment, sorrow and horror of the disciples, as they say to their Master, "Lord, is it I?"

We have a fine study in expression here, not only in the faces, but in the hands and bodies of the twelve who are seated at the table with Jesus.

Christ is at the center. At His right is John; next, Judas, who holds the money bag. Behind Judas we see Peter, who leans over to touch John's shoulder. Next is Andrew, with uplifted hands, and beyond him are James and Bartholomew. Seated at the left of Jesus we find Thomas, the doubter, then James, Philip, Matthew, Thaddeus and Simon.

The disciples, with Jesus, are seated in a large hall with three windows at the back, through which we can look out upon the country beyond. It is evening, and the head of Christ stands out against the central window.

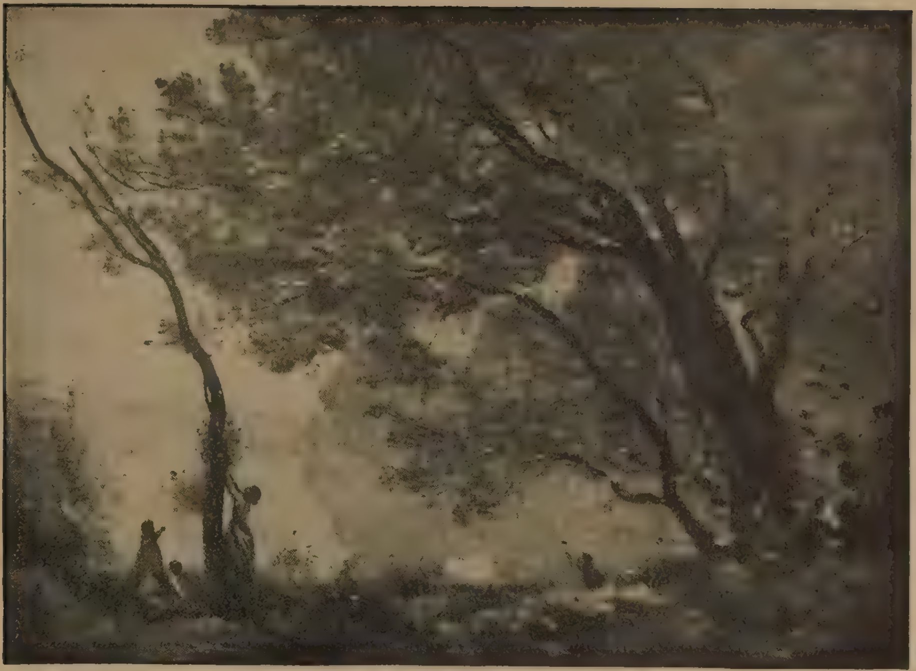
This picture was painted upon the wall of the refectory, or dining-hall, of the Santa Maria delle Grazie, a convent in Milan. Leonardo spent about two years on the picture. He painted slowly and conscientiously, and went over and over his work, day by day retouching and bettering it. It was painted between 1496 and 1498.

The last heads to be painted were those of Christ and Judas. Da Vinci felt those faces to be the most important of the group and wished to study over them. But the monks grew impatient over the delay, and one of them urged the artist so persistently that finally Da Vinci, in disgust, painted the face of the nagging monk as the despised Judas.

Then despairing of ever putting upon canvas his dream of the face of Christ, he painted it hastily, and it is said, with little care. At his death, Da Vinci said the great picture was still unfinished.

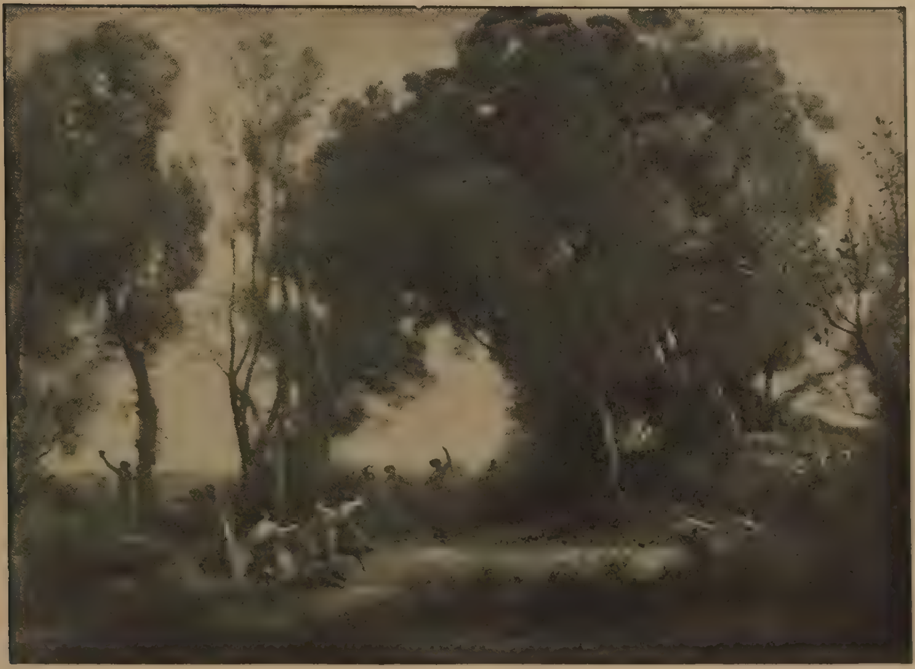
"The Last Supper" occupies a wall twenty-eight feet in length and the figures are more than life-size.

The painting has had rough treatment since



Corot

Spring



Corot

Dance of the Nymphs

then and is almost entirely gone. Napoleon and his soldiers used the room as a stable for their horses, and the beautiful picture was grimed with smoke, and worst of all, it even had a doorway cut through the canvas!

If it were not for the fact that Leonardo's pupils made a number of copies of it, much of its beauty would be lost to us.

The artist was born in 1452, near Florence, Italy, in the castle of Vinci. As a child he showed so much talent in so many different lines that his father gave him every advantage. He studied music, and not only wrote his own compositions, words and melody, but invented an instrument upon which he played. Leonardo had a great liking for mathematics, for botany and other sciences.

When he was just a boy studying with an artist who was at work on an order, Leonardo was allowed to paint in one of the angel figures. The pupil's work was so much better than the rest of the picture that the teacher is said to have broken his palette and burned his brushes, in despair.

Besides all of his other talents, the artist was an engineer, a bridge-builder, a naturalist, an inventor and an author, and excelled in all he did. He is spoken of as a man in whom "every talent was combined."

He and Michael Angelo lived at the same time and were rivals in their work. Raphael, too, lived then, and died a year after Da Vinci, who died in 1519. What wonderful things were done then, with those three great artists living and painting in Italy at the same time!

It seems strange that so great an artist should have left so few pictures. His "Mona Lisa" is one of the masterpieces of the world. Besides this and "The Last Supper," he painted a "Head of Medusa," "Adoration of the Magi," the "Madonna della Caraffa" and a few others.

—Bess Bruce Cleaveland.

"The Infant Samuel"

THIS is the picture of a little English boy, whom Reynolds found in the street. He is posing as the Infant Samuel and is asking God to bless him and teach him how to do good.

The Bible story is, that Samuel's mother made a vow that if a son were born to her she would give him to the Lord all the days of his life.

A tunnel of light comes from above illuminating the face, giving to it a spiritual remoteness. All the light proceeds from the boy and radiates toward darkness at the sides and corners.

The child is resting easily, sitting on his feet, and his dimpled hands are raised in prayer. The beautiful curves of the curly head are in keeping with the curves of the face and body, especially those around the knee. The eyes are angelic in expression. We feel the heavenly communion of the child and want to step quietly that he may not be disturbed or distracted. The arrangement of the folds of the simple, childish nightgown expresses the movement of the body and the character of the child. Notice the folds of the drapery and the deep shadows. Cover the drapery and table with your hand and see the effect. This touch of setting balances the picture and gives ease and warmth to it; otherwise so far as the background is arranged, we might well think the child is outdoors.

The clouds and rings are among the surroundings we most frequently connect with angels. We feel that the child sees something heavenly which is beyond our vision. This is a masterpiece of childish simplicity and prayer. Reynolds summoned the mind of this boy into the face. While this picture is not the greatest of Reynold's portraits, it is the most often reproduced and is the "darling baby" of the British nation. It was painted in 1776 and hangs in the National Gallery in London.

Sir Joshua Reynolds was born in 1723 in Plympton, Devonshire, England, and died in 1792. He is the greatest English portrait painter. In character, expression and ease he is unsurpassed.

Reynolds painted his first portrait at the age of twelve. His studio was a boathouse on the beach, his canvas was a bit of a sail and his colors were common ship paints. He studied the great masters and his life was one continuous success. Before he painted a picture he always made this resolution, "This will be the greatest portrait I have ever painted."

The grace of Reynolds has passed into a proverb; and in this quality he is equal to any of the Italians. No one has rendered so lovingly and accurately, and in such manifold phases, the singular charm of childhood as Reynolds.

His models were men and women of fashion, the scholar, the statesman and the actor, as well as little children. He had the habit of stopping any pretty little beggar children he met on the street and inviting them into his studio. This is where he found the model for the "Infant Samuel." Another of his models was his grandniece, and the picture for which she posed is called "The Age of Innocence." It is one of his best. "Miss Simplicity" is another noted picture. These paintings of children Sir Joshua called "Fancy Pictures."

The grace, beauty and simplicity of his portraits have never been surpassed. Reynolds painted between two and three thousand portraits, and ranks as one of the world's famous portrait painters. His men are strong in action and character, the women gentle and pure, the children innocent and natural. *—Anne Dillon Durr.*

Millet

Woman Churning

Bonheur

The Horse Fair

Corot and His Pictures

COROT said of his own pictures, "To get really into my landscape you must wait—wait till the mists have cleared a little. Be patient! You can't see the whole of it at first; but gradually, by and by, you will get in; and then I am sure you will be pleased." So we must take his advice and study his picture to get all there is in it of beauty.

Corot was born in Paris in 1796, and had his school education at Rouen. The family spent their winters in Paris, but had a little home in the country where they went every summer.

The artist was always called by his third name, Camille, when he was a child. The little Camille loved his country home where there was a large pond shaded by trees. He was a dreamy, imaginative little fellow, happy with the birds, flowers and trees. All day he would be busy out-of-doors, and when night came, he would watch the moon sailing across the sky. He liked to imagine it was a shepherdess with the soft white clouds for her sheep. Under the trees, crossing the lake on leaves, he saw the fairies, whose lanterns were dancing fire-flies.

When the boy was about seventeen, his father wished him to become a dry-goods clerk, and he was put into a merchant's shop. Camille tried his best to like it, but it was pretty hard for him, as he longed to be out under the blue sky. He comforted himself by sketching the things he saw on his way to work, and filled his sketch-book with trees and flowers, the river winding through the fields and the fleecy clouds reflected in it. He made friends with an artist who taught him to use colors, showing him how to mix the paints and encouraging him by his interest.

Corot longed to leave the dry-goods store and finally the father consented. How happy Camille was then with his painting!

When this artist friend died, Corot studied with a landscape painter. When he was about twenty-nine years old, he went to Italy to study. He soon made a great many friends among the artists there, as he was always ready for a good time. He could tell a story well and had a sweet voice.

But the artists laughed at his beloved pictures. You see, they were so different from the paintings of those times. However, Corot went on with his work, not minding their fun at his expense, always happy with the birds and the trees. He would start for the woods, wearing a great straw hat, and carrying an umbrella, and as he went, he talked to the little wood-people, saying, "Is it for me you are singing, little bird? Well, this is fine!"

At home at his work he wore a loose blue blouse and a red and white striped cap. When it grew too dark to work, he would say, "Well, I must stop. My Heavenly Father has put out my lamp."

Corot was devoted to his mother, whom he called "the beautiful woman," and always went with her to church. He said he was proud to walk with her. He still spent his winters in Paris, but when April came, he was off to the woods to see his friends, the trees, the flowers and the birds. He said, "The birds perch on the branches above me to see me work."

When the artist was thirty-one, one of his pictures was hung in a large art gallery in Paris. But for a long time no one cared to buy his pictures, though they were shown in Paris every year.

However, after a while the artists began to appreciate his work, and in 1867 he received the Cross of the Legion of Honor. After this he began to sell his pictures. Before long he became so popular in society he could hardly find time for his painting, so he had to set aside one day each week when his friends and visitors might come to his studio.

Corot in time came to be called Pere Corot, or Father Corot. No beggar was ever turned away without help, and he was as great a friend to the children as he was to the birds.

He gave a pension to the widow of the artist Millet, enough to keep her in comfort for the rest of her life. He had a great many students whom he taught without pay.

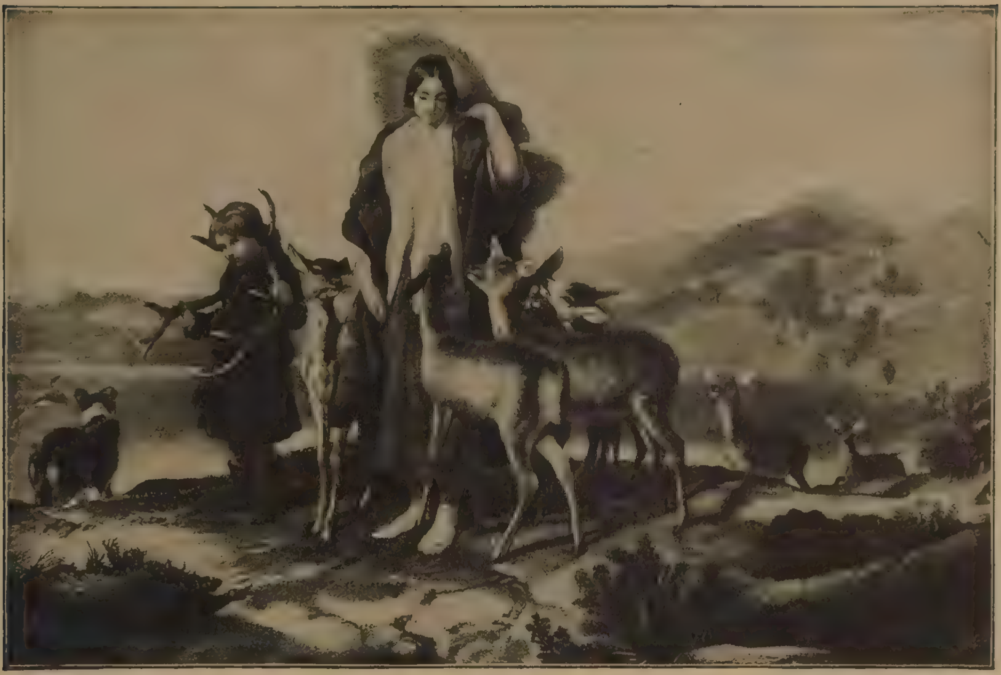
All France was sad when Corot died. Besides being a great artist, he was a gentle, loving man, generous and kind to every one. Surely that reputation is better even than that of a famous painter. He was almost eighty years old when he died in 1875.

Corot's picture "Spring" hangs in the Louvre, a great art gallery in Paris. It is a picture only about two feet by three but full of rare beauty. The picture shows a lake still veiled in morning mist, but with a wonderful light streaming down through the great willow tree, whose branches spread across the sky. Near us the grass is yellow-green in the sun. In the distance this color changes into soft yellow with a suggestion of rose, which is repeated in the top branches of the willow, in the dress of the tallest girl and the bright cap of the kneeling one of the group in the foreground.

Other beautiful pictures by Corot are: "The Dance of the Nymphs," "The Willows," "Evening," "Solitude," "Idyl" and "A View in Italy."

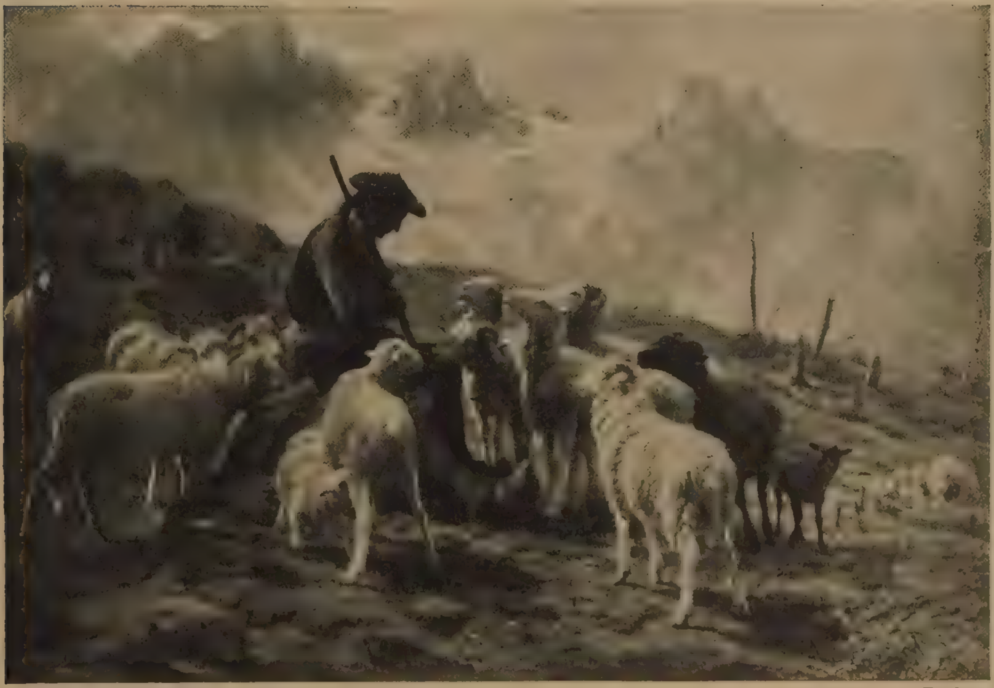
"Corot was the supreme master of landscape art, of light, of atmosphere, and moving foliage; the happy, hopeful thoughts in his heart could not but influence his work. He sang as he painted and used to compare his pictures to 'little songs' and so fond of music was he that his life seems one continual melody."

—*Bess Bruce Cleaveland.*



Landseer

Highland Lassie and Fawns



Bonheur

A Shepherd of the Pyrenees

"The Gleaners"

As it was with the ancient Hebrews, so the custom of leaving some grain from the harvest for the poor is observed in France. In Leviticus XXIII, verse 22, we find: "And when ye reap the harvest of your land, thou shalt not make clean riddance of the corners of thy field when thou reapest, neither shalt thou gather any gleaning of thy harvest: thou shalt leave them unto the poor, and to the stranger." The owner of the grain field in France fears bad luck may overtake him if he disregards this old custom. So Millet must often have seen the peasant women gathering, here and there, the precious wheat heads.

Let us study our picture. Just three poorly clad figures stooping over the ground, with the stacks of wheat in the distance. But what a fine study in lines, and in light and shade! What distance Millet has shown, and how surrounded by air and sunlight the figures seem! It is about noon, as we see by the short shadows cast on the ground. The women are neatly dressed, with kerchiefs projecting over their eyes to keep out the sun. See how the square outline of the central figures is repeated in the vertical and horizontal lines of clothing and arms. The women are of different ages. The one half-standing is evidently the oldest—she finds it hard to stoop. Of the bent figures, the one on the right is a strong and sturdy matron, while the other shows youth by the girlish form and greater freedom of motion. Quite a little detail is shown in the background of the picture.

Lead children to feel the dignity of labor well done—even the homely task shown in this picture. The great painter loved the simple, country scenes and has caught and held their beauties for ages to come.

Jean Francois Millet (1814-1875) was the son of poor French peasants. He was born on the extreme northwest coast of France in the little village of Greville. His father and mother worked early and late in the stony fields to earn a simple living. He was one of nine children. His grandmother was a very religious woman, caring for the little boy while his mother helped in the field. She influenced his life, always reminding him to keep the presence of God and the sound of the last trumpet in his mind. One of his earliest recollections was the voice of his grandmother saying, "Wake up, my little one, the birds have long been singing the glory of God."

One Sunday he noticed the bent figure of an old man returning from church. He was then about eighteen years old. He drew on a wall so exact a picture of the old man, that his father decided to send him to Cherbourg to be a painter. He was there only a few months when his father died. Then his grandmother sent him back to the city with the pennies of her savings. From there he went to Paris, studying the masters. He was so poor that it is said he sold six drawings for a pair of shoes.

Millet longed for the country life and the toiling men and women whom he had always known. He moved to a tiny hamlet called Barbizon, which was thirty miles from Paris. It is here that he painted his great masterpieces.

Rich men of the world vie with one another for the possession of "a Millet." "The Gleaners," "The Sower" and "The Angelus" are the world's masterpieces. The French government bought "The Gleaners" for a fabulous sum. It is to hang in the Louvre in perpetuity.

—*Bess Bruce Cleaveland.*

"The Woman Churning"

"Thou shalt live in the sweat of thy brow." The peasant's life is the first and most fundamental of human labors. This picture shows a Norman peasant busily churning. We see the interior of the dairy, a quaint place with raftered ceiling and a stone floor. The furnishings are only such as are required for the work in hand. Against the farther wall are earthenware or metal vessels to hold cream, butter or cheese.

The churn is old-fashioned. She is working the dasher or plunger up and down so as to keep the cream in motion. Her expression of satisfaction indicates that there will be no trouble in making the butter.

Her sleeves are rolled up, and notice how her skirt is drawn up in the back. She stands firmly and attacks her work in a forcible manner, squaring her shoulders to the task.

The light comes from some high window at the left. See how it shines on the arms, showing the hardness of the flesh. The knuckles are knotted and large. She is accustomed to toil. Notice the Norman cap. Caps worn in Normandy are noted for their height.

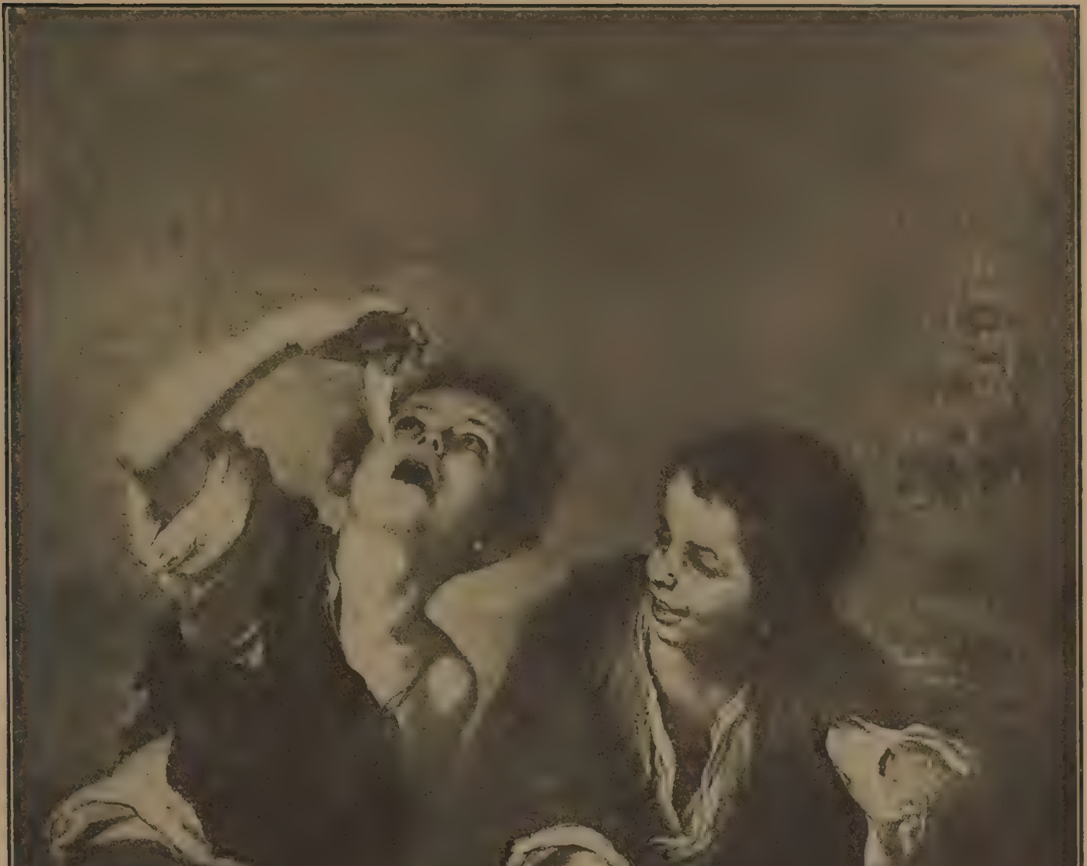
The cat is rubbing against her skirts as if asking for a saucer of milk.

The main lines in the foreground form a pyramid, the shape of the churn giving the right edge, and the figure of the cat completes the line of the woman's skirt into a corresponding slant at the left.

The lines of the floor add to the effect of the pyramid; even the broom leaning against the shelf near the door takes the same diagonal direction as the lines of the floor on the right.

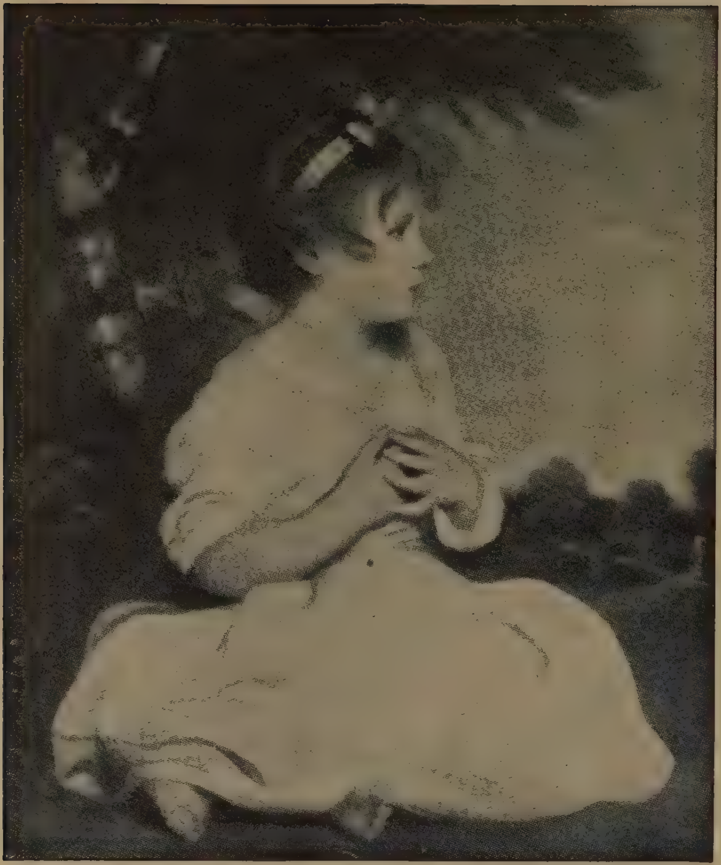
This picture is a splendid illustration of the art of treating spaces. An outlet is given to the room through a door opening into a farm-yard. A chicken is at the door, and across the yard stands a low cow-shed in which is seated a woman milking a cow.

—*Anne Dillon Durr.*



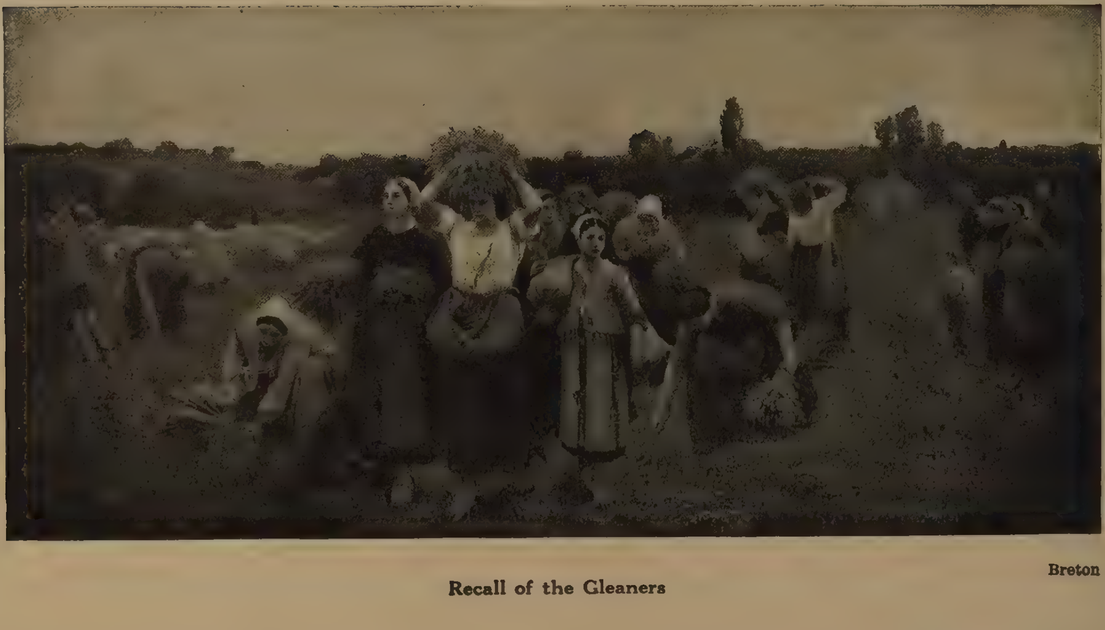
Murillo

THE MELON EATERS



Reynolds

Age of Innocence



Breton

Recall of the Gleaners

Millet

Feeding Her Birds

The Return to the Farm

Rosa Bonheur and Her Paintings

ROSA BONHEUR was born at Bordeaux, on the west coast of France. Her father, who was an artist, had fallen in love with and married one of his pupils, a beautiful young musician. The father was only twenty-two and the mother still younger when their first child, Rosa, was born. They lived with Rosa's grandparents. The family was poor and as soon as she was old enough, the little girl used to help her mother with the housework.

Rosa loved animals and when she was only a little girl tried to draw them, and so her father began to give her drawing lessons.

Her father, Raymond Bonheur, was a portrait painter, and each of his children, as they grew able, helped him in his studio. But Rosa had the most talent and did the best work.

Their first home in Paris was over a bathhouse. Rosa was so lonely without her animal friends that she sometimes used to slip across the street and pet the queer wooden pig in front of the butcher's shop.

Not far away was a boys' school which her brothers attended. The master noticed the lonely little girl and asked her father to send her to school with her brothers. Rosa was used to playing with her brothers and did not at all mind being the only girl. She entered heartily into the games and was soon on a friendly footing with all the boys.

When the mother died in 1835 the home was broken up. Rosa was sent to one boarding school, her two brothers to another, and the little sister Juliette was cared for by a friend of the mother's at Bordeaux.

Rosa did not get on very well in school. The other girls laughed at her on account of her carelessness in dress and her love of boyish sports. She scribbled over her books and made funny pictures. One day she found a sword and played that the beautiful rose bushes were the enemy. The lawn was covered with lovely flowers. When the mischief was discovered, Rosa was sent home to her father.

Rosa was placed with a seamstress to learn to sew. The long hours and the indoor life wore on her. She did not do very well with the sewing and disliked it very much, and so her father took her away. She spent much time in the studio with him. He began now for the first time to give her regular lessons. She dressed in boy's clothes and went with him everywhere. Those who knew her well called her the "Little Hussar."

Soon she began to copy the beautiful pictures in the Louvre. For about four years she spent most of her time here. She worked early and late, hardly stopping long enough to eat her lunch. But it was work that she enjoyed, and she knew that she was learning a great deal by studying these beautiful paintings. Her copies sold readily and for good prices, and so at last, to her delight, she was able to help care for the others.

Her first two pictures exhibited in the French Salon were a study of sheep, and two rabbits nibbling a carrot.

Rosa Bonheur won the third class gold medal in 1845. When the director gave it to her she said, "Thank the king very much for me and deign to add that I intend to do better next time." Three years later she won the first prize.

Raymond Bonheur was director of a young ladies' school during the last years of his life. When Rosa was working on her picture "Oxen Ploughing," as there was no suitable studio, she was obliged to do the work at some distance away. On account of failing health her father was not able to go to see the picture until it was finished. Then he made a great effort and went. He examined the painting very carefully, and was very much pleased with his daughter's work. In a few days he passed away.

The success of the "Oxen Ploughing" spurred her on to the painting of "The Horse Fair." She went wherever she could study fine horses and made sketches of them in all sorts of positions. When painting the picture, she was often obliged to use a ladder. This picture, which is her masterpiece, she exhibited in 1853. She offered it to her native town of Bordeaux for 12,000 francs, but the offer was not accepted. She afterwards sold the painting for 40,000 francs, (about $8,000) in England where it was exhibited. The picture was brought to America for exhibition and was purchased by Mr. Cornelius Vanderbilt for $55,500 for the Metropolitan Museum in New York. The artist made a replica, a quarter size of the original, from which the engravings were taken. This replica is in the National Gallery in London. There is also a smaller replica in London and a water color.

After a visit to Scotland, where she made many sketches, she painted "Morning in the Highlands," "Denizens of the Highlands," "Changing Pasture," "Crossing a Loch," and others.

A "Shepherd of the Pyrenees" ranks among her best sheep pictures, although this picture is not so well known in America as some of her others. It hangs in the Conde Museum, Chantilly.

Later she made a special study of lions and tigers. "Lions at Home," "An Old Monarch" and "Repose" show how well she understood these kingly beasts.

Rosa Bonheur was the first woman to be decorated with the Cross of the Legion of Honor. The Empress Eugenie herself pinned it on her blouse after giving her an affectionate kiss. During the latter part of her life she lived quietly at By. She died May 25, 1899. —*Harriet G. Brown.*

Landseer

A PIPER AND A PAIR OF NUTCRACKERS

"A Piper and a Pair of Nutcrackers"

A PIPER and a Pair of Nutcrackers" was the next to the last picture painted by the great English master, Landseer. It was painted in 1864.

Landseer rivaled the Dutch masters of the seventeenth century in painting fur, hair, and feathers. He was unfavorably criticised for illustrating the friendship of animals for man by humanizing them. This picture is one of the few painted by Landseer that is not sentimental. It shows the squirrels as they are in nature.

See how cleverly the sense of safety, rest, and activity are portrayed. The little squirrels and the bullfinch feel the security of their haunt, the tree. A tree represents courage, patience, trust, perseverance, and protection. The birds nestle in its branches and sing. Man rests in its shade, and the animals seek its protection.

The squirrels are vigorously eating their breakfast of nuts. The light comes from the side and high up. See the high light on the tips of the tails, the sides of the squirrels, and full on the breast of the bullfinch. See particularly the high light on the side and a little behind the ears of the squirrels.

Observe the contrast of the deep shadow under the bird's bill. The bullfinch is bursting forth in song, singing as if his little throat could not pour forth melody fast enough. Notice the keen watchful eyes of the squirrels. At a moment's warning they are ready to disappear into the tree.

Their eyes are full of vitality. Landseer has made them appear almost human.

The center of interest in this picture is the piper. It is placed near the foreground and a little to the left. The high light is full on its body.

Artists always place the important object of a picture to the right or left of the center.

Look at the exquisite execution of the glossy and crisp hair of the squirrels.

Observe the folds of fat produced by light and shade on the hips of the squirrel.

Landseer skilfully portrays the characteristics of the squirrel—his claw-tipped feet, sharp ears, keen eyes, bushy tail, life in the tree and his peculiar upright position.

Sir Edwin Henry Landseer (1802—1873) was born in London. For fifty years his works formed the chief features of attraction in the Royal Academy in London. Reproductions of them have circled the globe.

Landseer came of a family of artists, there being no less than eight in his immediate family. When he was only three years old his father and brothers would take him for an outing to Hampstead Heath and there sketch goats, donkeys, sheep and cows. When little Edwin was only five he sketched "A Sleeping Dog." In South Kensington Museum are sketches from the time he was five years old until his death. At eight he learned the process of etching from his father. Before he was in his teens he was beyond the teaching which his father could give him.

No painter ever lived who is so universally known as Landseer. In 1835 he began to paint for the royal family. He taught Queen Victoria how to etch. For the excellence of his work he was knighted in 1850.

A visit to Sir Walter Scott in Scotland influenced his art. A lover of sport, Landseer learned the deer in their native haunts, and was the first to introduce them into art. The grandeur of the Scotch mountain scenery was noticeable in the background of many of his pictures.

From this time he began to paint dogs in relation to man, endowing them with human sentiments. This quality is one of the chief sources of his popularity with the public.

Landseer increased his popularity by selecting names wisely for his paintings, such as "High Life and Low Life," "The Shepherd's Chief Mourner," and "Dignity and Impudence."

At the National Gallery in London are sixty-seven canvases by Landseer and he painted over one hundred pictures for the queen, costing over one quarter of a million of dollars.

He is buried beside Reynolds and Turner in St. Paul's Cathedral, London.

—*Anne Dillon Durr.*

"The Age of Innocence"

THIS picture was painted in England, about the time of our Revolution, probably in 1773, though the date is not clearly known. The artist is Sir Joshua Reynolds, a sketch of whose life appears elsewhere in these pages.

Reynolds loved children and painted them especially well. In the original of this picture the coloring is beautiful, and the soft flesh is well shown. The wee maiden has a pink ribbon in her brown hair and another about her waist. See how lovely the little throat is, and how graceful the baby hands are! The head is the center of interest, as it should be, and the detail of the rest of the picture is not so clearly shown. The little girl is sitting outdoors, and the trees and ground show the dull brown of autumn. The sky is blue, with rosy clouds.

It is hard to explain just what a masterpiece is, and why it is so called, but the dictionary says that a masterpiece is "anything done with extraordinary skill." That is a pretty good definition for our picture. It is so well planned, the spacing is so fine, the little figure so real, so natural and unconscious! Surely we will agree with the critics who have called this one of the world's masterpieces. —*Bess Bruce Cleaveland.*

Von Bremen

The Little Brother

Millais

Going to the Squire

Salvator Rosa

Diogenes in Search of an Honest Man

Reynolds

Angels' Heads

The Story of Murillo

BARTOLOME ESTEBAN MURILLO was born in Seville, Spain, and baptized on New Year's day, 1618.

The home to which the baby came was owned by the convent, and his father, Gaspar Esteban, paid his rent by keeping the house in repair. The little boy's uncle, Juan del Castillo, was an artist and had an art school of his own, so Murillo from the start was encouraged to become an artist, in spite of the fact that his mother would have preferred that he become a priest.

Before the child was eleven years old, he and his sister were left without father or mother, and went to live with their mother's sister, the Dona Anna Murillo, so the artist came to be known by the name of Murillo. As he early showed his talent, he was taken by his uncle Juan, and began an apprenticeship of nine years as painter under him.

When the youth was twenty-two years old, his uncle's home was broken up and Murillo was left without money to care for his little sister Theresa. In order to earn a living for them both, he began to paint pictures of the peasantry of Seville, making numerous rough sketches which found a ready sale.

Strangely enough, before Europe recognized the artist, his work was known to our own American Indians. A friend of Murillo, named Moya, who had traveled for two years, filled him with a desire to leave Spain and see something of other lands. But the artist was barely able to support himself and his sister and had no money for journeys to the countries he longed to see.

He bought a piece of linen, cut it into six pieces, and painted pictures on them. These he succeeded in selling to a ship-owner, and eventually they came to America and were hung on the walls of one of the early Spanish Missions.

After the sale of his pictures, Murillo went to Madrid where he gained the commendation of his famous townsman, Velasquez, and through his influence was enabled to study the masterpieces of Flemish and Italian art in the royal galleries. Murillo's early paintings, as we have said, were of humble peasant folk. But he lived at a time when there was great demand for religious paintings. Large sums of money were donated for the decoration of churches and convents, and Murillo's orders were principally for sacred pictures. A number of these were exported to South America.

He spent two or three years in Madrid, making many friends and painting industriously. But he grew restless and longed for his home and sister in Seville. So he decided to return, although Velasquez advised his going to Rome and offered him letters to artists there. During the next three years Murillo painted eleven large pictures for the Franciscan convent in Seville. "The Death of St. Clara," and "The Angels' Kitchen" are among these. He received great recognition in his native place and was soon acknowledged the greatest master there. In 1648 he was married to a woman of wealth and was able to live well and have as his friends people of wealth and taste.

Many stories are told of his kindness. One of a slave, Sebastian, who, while Murillo was absent from his studio, completed the head of the Virgin in a picture which the artist had left unfinished. Murillo was so delighted with the talent shown that he freed the slave, who afterward painted a number of famous pictures.

In 1660 Murillo established the academy of Seville but was principal of that school for only one year. From 1670 to 1674, only four years, he painted between thirty and thirty-five pictures, eleven of which were for a charity hospital, and the rest for the Capuchin Convent, both in Seville.

In 1682 Murillo went to Cadiz where he was painting an altar piece for the church of the Capuchins. He fell from the scaffold on which he was working and received such severe injuries that he died from their effects, April, 1682.

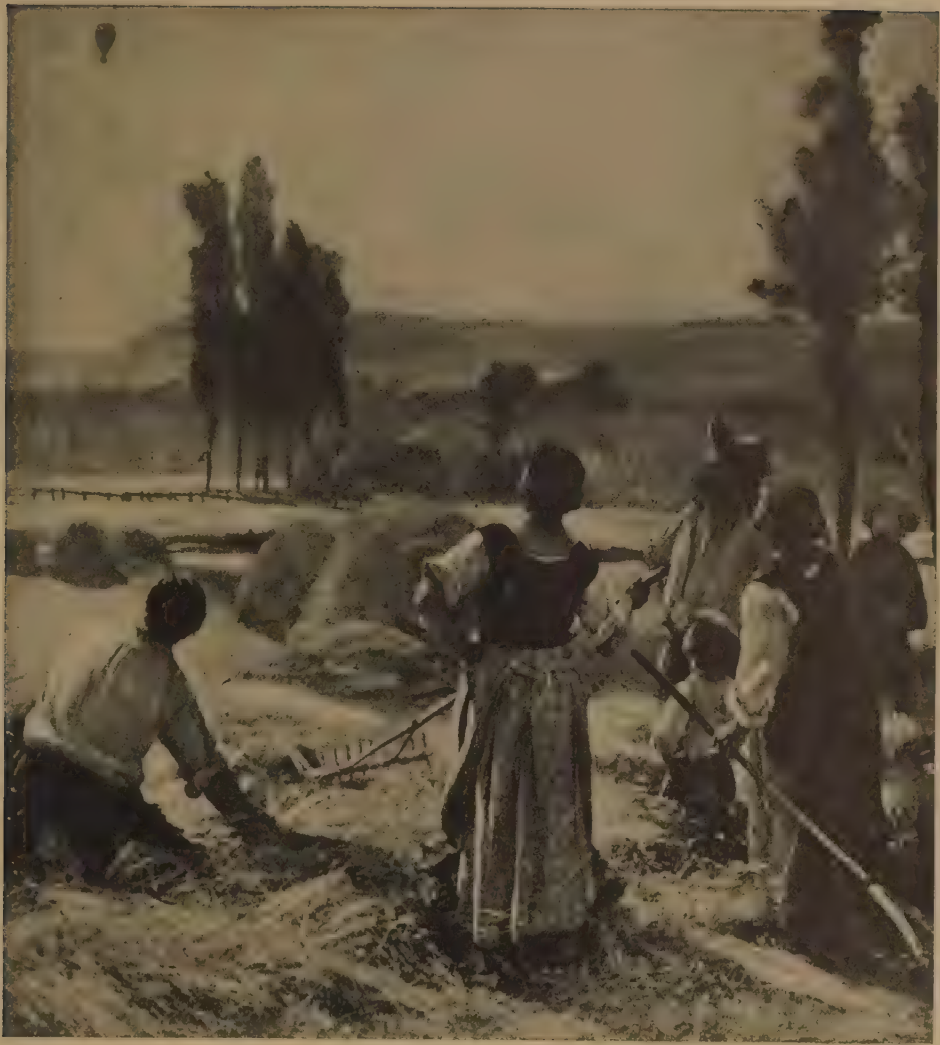
Murillo was a man of ardent temperament, with the strong love of beauty and color characteristic of the Spanish race. With this feeling there was combined a bent toward realism which made his work individual. All the details of his pictures, flowers, fruits, animals, household utensils, etc., were finished with the utmost care.

Although force of circumstances caused Murillo to paint a great many pictures of a religious nature, he was intensely interested in the humble life of Spain and, under his brush, even the Old Testament characters partook of the characteristics of the Spanish peasantry. His pictures "The Fruit Venders," "The Dice Players," "Boy at the Window," "Youth's Head," and the one shown here, "The Melon Eaters," all portray Spanish peasant life at that period.

Among his religious paintings the most noted are "The Immaculate Conception," "The Education of the Virgin," Jesus and John" known as "The Children of the Shell," "The Holy Family," and "The Vision of St. Anthony."

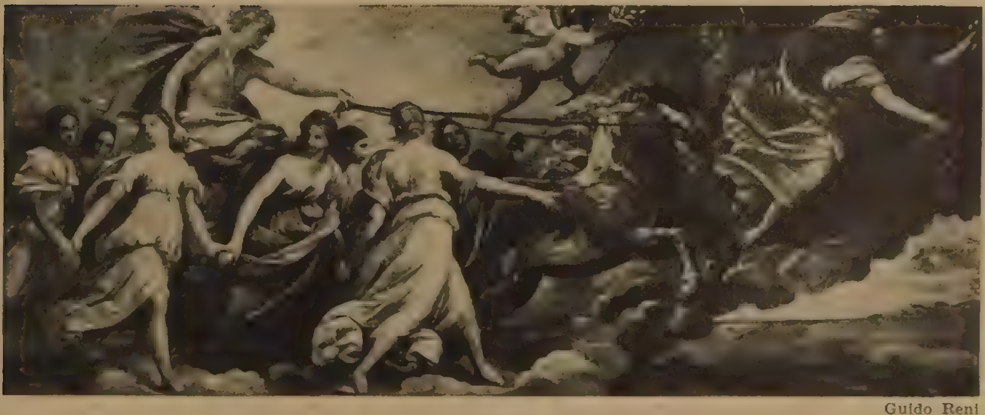
"The Melon Eaters" now hangs in Munich. Murillo painted another picture known as "The Melon Eaters" or "The Grape Eaters," evidently from the same models.

Children will be interested to see how the attention is drawn to the one boy by the friendly interest of his two companions, the boy and the dog. They will feel, too, the arrested action of the child with the melon, his body braced by one hand while his eager mouth anticipates the luscious bit. They will be interested, too, in naming the fruits in the basket. —*Bess Bruce Cleaveland.*



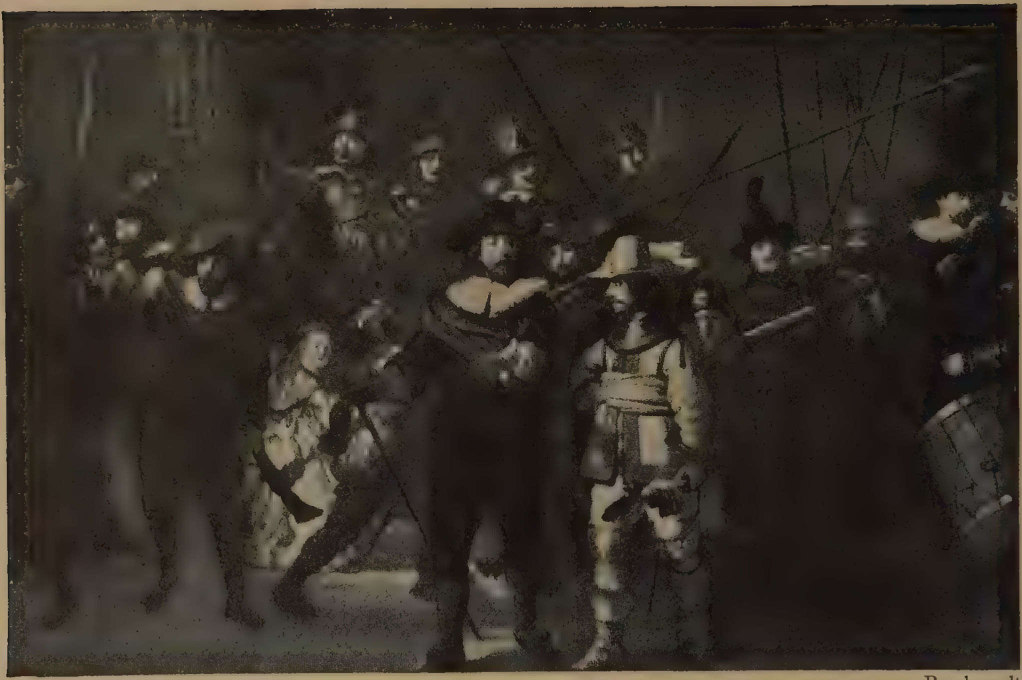
Dupre

The Balloon



Guido Reni

The Aurora



Rembrandt

The Night Watch

Van Dyck

The Children of Charles I

G. A. Holmes

Can't You Talk?

Renouf

A Helping Hand

The Story of Jules Breton

IT WAS spring. House-cleaning time had come, and was stirring things up in the Breton's pretty home in the little French village of Courrieres. A workman had come with his paints, to touch up some of the paintings which hung on the walls of the house.

Little Jules Breton kept close to the painter as he worked. How pretty the colors in the little pots were! The little boy watched the man work, and made up his mind that he, too, would be a painter some day. After the man had finished his work and gone, little Jules ran to his grandmother. "Grandmother," he said, "I am going to be a painter when I am a man. I shall paint just as well as this man does."

"I am sure you will," his grandmother answered. And, years later, when the little boy had grown up, he painted much more beautiful pictures than the painter he watched that day ever dreamed of.

Do you wonder why Jules did not first go to his mother to tell of his plan? He was only six years old at this time, but for nearly two years his mother had been in heaven.

Jules loved his grandmother dearly. She was always ready to tell him strange stories of the terrible time when Robespierre led bands of wicked men through the country and robbed churches. Grandmother was only a girl then but she was afraid that these men would steal the statue of the patron saint from her church, which she loved. So she carried off the statue and hid it. The men found out that she had hidden the statue, were angry, and put her in prison. She feared that they would kill her. But one day Robespierre died, and she was allowed to go to her home.

Jules often drew pictures of queer looking animals and birds. He was very proud of his drawings, and always showed them to his grandmother. She was always pleased with them.

The room was dark, and the air bad in the place where the little boy was first sent to school. He had always been used to playing out of doors in the fresh air and sunshine, and when he was shut up in this place Jules soon became ill, and was taken out of school. He was glad, for he had not been happy there. Later, his father had a large room fitted up as a schoolroom, with books and globes and maps. The little boy's uncle came to be his teacher. Jules and his brother studied there every day. They enjoyed it very much, for they loved their uncle. He taught them many things, too, that are not found in books. Sometimes he would take them for a little excursion.

When Jules was ten years old, he was sent away to a seminary. He was not happy there, for the boys laughed at him. His father allowed him to take the drawing course. So Jules worked hard. He did not have as expensive paints as the other boys, but his work was always better than theirs.

One day an old woman came to Jules. She asked him to help her, because she had received an order for a sign board and she could not do the drawing. Jules was very kind to her. He told her not to worry, that he would paint it for her. He painted a peasant wearing a bright green coat. The old woman thought that his work was wonderful. This was the first painting of Jules Breton that was exhibited to the public, but afterward he painted a great many pictures of peasants. Jules was sent to the college at Donnai. He loved the drawing teacher here and worked hard drawing from the cast.

Once, while Jules was home for vacation, a great artist, named Devigne, visited his father. Devigne came to see some valuable books on art which belonged to Jules's uncle. He soon came to paint the portrait of the uncle. Jules watched the artist while he painted. The boy liked to watch the portrait grow under the skilful strokes of the artist. At last Jules found courage to show some of his sketches to the great artist. Devigne was pleased with them, and said that the boy had talent. He invited Jules to go with him to Ghent, and study for three months on trial. Jules went, and did so well that the three months lengthened into three years. He was very happy here. He liked the Academy of Painting, the beautiful churches, and the promenades. Often in the evening he would have a good romp with the artist's children. Etoilde, a little blue-eyed girl of seven years, was his special pet. Years later, when Breton painted the "Planting of Calvary," Etoilde posed for one of the girls. Breton had often seen the planting of calvaries, or crosses, on top of a hill. In this painting there are three young girls dressed in white. The one carrying the crown of thorns is Etoilde. The picture was painted just after she had promised to be his wife. Perhaps this is why the painting is called "one of Breton's happiest pictures."

The "Song of the Lark" is typical of Breton's pictures. The girl's soul shines in her face as she listens to the lark's song. Behind her stretch the fields. They suggest toil, and the girl does, too. But she had the song in her heart. The dignity and joy of work are with her.

Breton loved to paint peasants, as did Millet. The "Recall of the Gleaners" is one of Breton's best. The tired peasants are returning from the field, but they are strong, healthy, glad and free. They seem to enjoy their work and live in the sunshine, as Millet's live in the shadow. Breton had a happy home. His life was full of gladness. Millet had a hard life, and the world looked gray and sad.

—*Harriet G. Brown.*

Ruysdael

The Mill

Adan

End of Day

"Can't You Talk?"

THIS picture is a special favorite with very little children. When they have each received a copy they will need no encouragement to begin a quiet study of the picture.

The three main objects will appeal to them—the child, the dog and the cat. The stand in the corner on which are deposited some miscellaneous articles perhaps will have to be called to their attention.

The child is only half dressed. Indeed, her one little garment is falling from her shoulders and we can easily imagine that she is just out of bed. It must be early in the morning and Baby has not been watched, so she has crawled out of the back door to have a chat with Fido. Fido is a large, sensible dog. He seems to know that this tiny tot should not be out in such a dress and he looks at her so earnestly that Baby asks him the question that gives the picture its name: "Can't you talk?"

G. A. Holmes, the artist who painted this picture, was born in England.

The three pictures of his that we hear the most about are "Can't You Talk?" "Kiss Me" and "Which Do You Like?" —*Ruth O. Dyer.*

"A Helping Hand"

THIS picture was painted by Emile Renouf, who was born in Paris in 1845. Even as a small boy he loved the water and loved to draw. When he could scarcely talk he would take a stick and sit for hours making pictures in the sand. When asked what he was doing, he would say in a lisping voice, "This is sea. This is sun. This is man," until he had named each object to his own satisfaction.

When he grew older and painted his pictures on canvas he dreamed his pictures before he made them. One morning he awoke and told his mother that he was going to put what he had dreamed on canvas. He would not eat until he had transferred from his mind to the canvas the impression he had received while asleep the night before.

Several of his pictures were painted in this way and the other artists began to call him "the dream painter." But he did not mind this and continued to draw and paint.

Let the children imagine a story about this picture.

They will easily locate the larger and more prominent objects, such as the man, the little girl, the boat and the oars, but the nets which are deposited in the back of the boat, the sails which are in front, and the little sail boats farther out on the water are not so easily noted. The rocks, too, which project above the water, may not be noticed.

The question: Where are these people going? is easily answered by the class. The nets, and the clothes of the old man make their errand evident. Yes, they are going fishing.

What relation do you think this man is to the little girl? It is easy to know this relationship. The age of the man and the idolizing way in which he looks towards her show us better than anything else that he is her grandfather.

Why does he have to row the boat? The wind has gone and he can not use his sail. Notice how the old man is dressed. He has on a very queer hat. What seems to you the queerest thing about it? Yes, its shape is very queer. It is much larger behind than it is before. The reason for this should be obtained from the children by means of a little skilful questioning on the part of the teacher. They may stay out for a long time on the water. How long do you think it will take them? Yes, perhaps a whole day, for you see the grandfather is a fisherman and must earn his living by the fish he catches. As he earns his living in this way, he will need to fish in the rain as well as in the sunshine. Now, can you see why his hat is made just as it is? Why, of course, it would not be pleasant to have the rain in one's face. It would be much better to have it run off on a rubber coat at the back.

The air on the water is colder than it is on the land. That is why the grandfather has found it necessary to wear a thick, warm sweater under his rubber coat. His trousers are old and have been patched below the knees. The salt water wears them out very quickly and the grandmother at home has found it necessary to mend them.

See the queer wooden shoes. They look as if they would be very uncomfortable, but they really feel very good to the feet.

The grandfather is smoking a pipe, and the hot smoke rises from the bowl and forms into little rings in the air.

Did you ever see a little girl dressed like this one? Probably not, for she is a little French girl. Why does she wear a hood? The day is cold and her ears need protection. The children will notice that she does not wear a coat, but her clothes look as if she had on something thick under her dress. She has on a little plaid dress, and a white apron which is not just like the aprons little American girls wear.

The little girl looks very serious. Doubtless the grandfather has told her that she can help him row. He has told her, too, just how it should be done, and she is trying hard to do it just right. The grandfather knows that her little hands can not help much, but he is pleased because she wants to help.

When they reach home the little girl will tell her grandmother about the trip, and the grandmother will smile while she knits in silence.

—*Ruth O. Dyer.*

Oxen Ploughing

Bonheur

The Gleaners

Millet

"The Children of Charles I"

VAN DYCK painted four portraits of the ''Children of Charles I.'' The picture here reproduced includes the well-known ''Baby Stuart,'' or James II. It is a charming painting of the children in the richness of their quaint court dress. One wonders how they could enjoy themselves much in such costumes, and, indeed, the baby faces are quite serious and dignified. The picture shows well Van Dyck's careful attention to detail. Notice the pearls about the throat of the little girl, the embroidery on both dresses and the shimmer of the satin. Most of the children will be familiar with the separate picture of ''Baby Stuart,'' with his round face, quaint, close fitting cap and clasped hands.

If possible, let the children see others of Van Dyck's pictures, the four different pictures of ''The Children of Charles I,'' ''Portrait of Charles I,'' ''Portrait of Van Dyck'' by himself, ''James Stuart, Duke of Lennox and Richmond,'' ''Charles, Prince of Wales'' and others.

The artist, Sir Anthony van Dyck, was born in Antwerp, in 1599, the son of a silk merchant. We do not know a great deal of his boyhood and education, save that he was, perhaps, too dainty a lad, and so was not greatly cared for by the more sturdy boys.

Anthony's mother did exquisite embroidery and it may have been from her that he inherited his love of beautiful things. When he was ten years old he was apprenticed to a painter and later on became a pupil of Rubens. Here he made such rapid progress that at the age of twenty he was spoken of by a fellow artist as almost as great as Rubens himself. The following story is told of Van Dyck while he was studying under Rubens. The master was at work on a picture in his private studio with orders that no one was to see it. In some way, however, his students gained access to the room and crowding close to see the picture, one of the lads was jostled against the wet paint, smudging it badly. We can imagine the consternation of the intruders. They decided Van Dyck was the only one capable of repairing the damage, so he set quickly to work and finished before the return of Rubens. The latter, when he saw what had happened, instead of reprimanding Van Dyck, as he had expected, praised the excellence of his work and made him his first assistant.

In 1632 he was appointed court painter to Charles I of England.

Van Dyck's life was spent in luxury and he was lavish with money. He is described as rather short and slender, with a dreamy, imaginative face and the long, sensitive fingers of an artist. He wore his beard after the fashion of the times, a style which is still known as the Van Dyck beard.

While he painted some fine Madonnas and other sacred pictures, he is best known by his portraits, chiefly of the nobility. He traveled extensively and painted all the great folk of Europe. He was in demand since he generally brought out the best points of his sitters.

—Bess Bruce Cleaveland.

"The Balloon"

THIS picture tells a story of French peasant life and perhaps of French history. During the Franco-Prussian War balloons began to play an important part. This is undoubtedly one of those balloons. The peasants stop their work to look at it in bewilderment, for it is an unusual occurrence. It sails gracefully away in the clear sky like an airy messenger. Soon it will be out of sight and apparently lost in the clouds.

The only action in the picture is the sailing away of the balloon, and notice how small a space it occupies. Yet it is the center of interest. We cannot say too often that the center of interest is seldom in the middle of a picture. Notice the balance in it. You may imagine, if you will, more haymakers to the left and more trees to the right, because the young man and the tree are only partly painted.

The tall, slender trees are very characteristic of certain parts of Normandy. Notice how very unnatural the tall tree at the right is. The explanation is, that these trees—poplars usually, but any tree which can be trained to grow without much lateral branching will do—are stripped every three years of their annual branches and leaves. The leaves serve for bedding cattle and the branches for fuel. Notice the trees in the middle distance. They are ready for stripping.

Study the life portrayed in this picture. The family group is present. The mother, not dressed like her daughter, has her hand up, protecting her eyes. She is standing by the father, and the little boy, the baby, is placed in front of them. The grown son and daughter, bareheaded and sturdy, represent both in dress and bodily poise the youth of the family. The amount of labor done is shown near them in the many piles of hay.

There is a fascination for the child, the youth, the man, the critic, and the peasant in this picture. It is one of the few of Dupre's pictures in America. ''The Balloon'' hangs among the superb paintings of the Metropolitan Museum in New York City.

The artist, Julien Dupre, was born in 1851, near Paris. He was always surrounded by artistic influences and studied under the guidance of two historical masters. He belongs to what is known as the ''Nature School'' of modern French Art. One of his recent pictures is ''In the Country,'' which was exhibited in the Salon in Paris in 1911.

—Anne Dillon Durr.

The Story of the Flag

By VIRGINIA BAKER, Author of "A Little New England Viking," etc.

What the Emblem of Our Country Means

WHAT is a flag? Is it a piece of colored silk or bunting or cotton cloth? Oh, no, indeed. It is a great deal more than that. Every flag made is an emblem of something. It has a meaning all its own, and no other flag stands for just the very same thing.

Every American boy and girl, and every child who comes from another country to live in America ought to know the history of the United States flag. It isn't enough to admire it, to think it bright and beautiful. They should all love it. They should all respect it. When they have learned fully just what it means, just what it stands for, I am sure that no other flag in the world will be so dear to them. I am going to tell you its story. But, first, I want to say something about flags that were in use long before our own dear "Star Spangled Banner" was even thought of.

Emperors, kings, chiefs of savage tribes, military companies, cities, towns and religious societies made use of various emblems or devices, in early times, and such emblems were needed. They enabled the people of one clan or race to recognize the people of another. Displayed upon battle fields, they showed plainly the position of the different military leaders and troops of horsemen and footmen.

It would be interesting to know who first planted or waved a flag in what is now the United States. A Dutch traveler who visited the New Netherlands (New York) in 1640 speaks of the emblems used by Indian tribes of that section, the bear, the wolf, and the tortoise. "These Indians," he says, "each have upon their banners the animal after which they are named, and when they go to war carry it as a sign of terror to their enemies, as they suppose, and of courage to themselves."

He does not describe the banners, but they were probably pieces of skin with figures painted on them. He does not state whether the Indians borrowed the idea of banners from the white people, or whether they had always been acquainted with the use of them.

There is very little doubt that the Norsemen, or Northmen (people of Norway, Sweden and Denmark), visited the shores of New England long before Christopher Columbus was born. These Norsemen were bold and hardy seamen who roved the ocean in long ships moved by sails and oars and having the carved figures of dragons at their prows. The banner of the Norsemen, in early times, was of white silk and had embroidered upon it a raven with open beak and outspread wings. The Norsemen believed that their great god Odin had two ravens, Hugin and Munin, which flew every day all over the world, and at night reported to him all that they saw and heard.

It is highly probable that this Norse banner with its sacred emblem was, at some period, brought to New England, for the Northmen made many voyages to our coasts after having discovered them. And, as they thought that their flag brought them good luck, it is most likely that they carried it with them wherever they went.

When Columbus landed on American soil he unfurled two different flags, and it is pleasant to feel that we know exactly what both of them were like.

First, there was the royal standard of Spain. Spain comprised the two kingdoms of Castile and Leon, and the emblems, or arms, of both were represented on the banner. Two golden castles on fields of red stood for Castile, and were alternated with two red lions on white fields standing for Leon.

The other banner, called the "Flag of the Expedition," was pure white and of a "swallow-tailed" form. In its center was a green cross, green signifying hope, and the cross being the symbol of Christianity. Just beneath the arms of the cross were two golden crowns. Under one of these was the letter F, the initial of King Ferdinand's name. Below the other was the letter Y, the initial of Queen Ysabella's name. We may well imagine that the Indians of San Salvador island gazed upon these two banners with wide open, wondering eyes.

In 1497 John Cabot made a voyage to America as commander of a fleet of English ships sent out by King Henry VII to make discoveries. Cabot was a native of Venice, Italy, and when he returned from his expedition he reported that he had set up a cross and the flags of England and Venice in the countries he had visited. We know that John Cabot discovered the mainland of America, and it is supposed that he planted the flags and cross in the barren regions of Labrador. The English flag of 1497 is thought to have been white, with a red cross—called the cross of Saint George—extending its entire length and width. The Venetian banner was bright scarlet with a band of blue near its edge. Saint Mark was considered the patron saint of Venice, so the flag was decorated with his symbol, a golden, winged lion holding a cross in his right paw.

It is believed that Jacques Cartier was the first to unfurl the French standard on this continent. In 1535 he set up a cross and the arms of France near where now stands the city of Quebec in Canada. It is thought that the flag used by him was blue and bore a design of three golden *fleur-de-lis.* Some of the French settlers who later came to America were Protestants called Huguenots. At first the Huguenots used the three golden lilies but afterward they adopted a white flag.

Henry Hudson, an Englishman employed by the Dutch, sailed his ship, the "Half Moon," into New York harbor in 1609. From the mast of his ship floated the flag of the Dutch East India Company, which consisted of three wide, horizontal stripes, one orange color, one white, and one blue, with the letters V. O. C. A. in the center of the white stripe.

In 1621 the Dutch West Indian Company came into control of the New Netherlands, as the Dutch colonies in America were called. Then the letters V. O. C. A. were taken from the flag and the letters G. W. C. were put in their place. After a while the orange stripe was discarded and a red one used instead.

From 1638 to 1655 the Swedish standard waved over a colony planted on the Delaware River by Swedes and Finns. The Swedish flag showed a yellow cross on a blue ground. Finally the Dutch drove the Swedes and Finns away, and set up their own banner in place of that of Sweden. Lastly came the English, in 1664, and took possession of the New Netherlands, hauling down the Dutch colors and hoisting those of England. In 1673 the Dutch again came into power, but not for long. Once more their ensign was lowered and the English flag run up in its place, where it remained until the War of the Revolution.

The "Cross of Saint George" waved over all the English settlements in Virginia, New England, Maryland, Delaware, Carolina, New Jersey and Georgia. This, as has been said, was the flag of England. There was another flag, called "the king's flag," which vessels flew. The "king's flag," or "king's colors," bore the red cross of Saint George, the patron saint of England, and the white, diagonal cross of Saint Andrew, the patron saint of Scotland. It was adopted soon after England and Scotland became united as one kingdom under James I.

The Puritans, who settled Massachusetts Bay Colony, did not regard the symbol of the cross with much favor. They had been persecuted in England for their religious beliefs, and they felt that it was wrong for them to pay respect to an emblem held sacred by the English Church. So, in the year 1634, Governor John Endicott, a stern and fearless man, cut out a part of the red cross from a flag used by the military company of Salem. For this offence Endicott was forbidden to hold public office for the term of one year, although the cutting of the flag was done because of religious scruples, not to show disrespect to the English government.

In 1643 the three colonies of Plymouth, Massachusetts Bay and Connecticut formed a league under the name of "The United Colonies of New England." Several years later (1686) they adopted a common flag, the cross of Saint George with a golden crown and the monogram of King George II emblazoned on its center.

What is known as the "Pine Tree Flag" came into use in Massachusetts as early as 1764. There were two forms of this flag. One had a red ground with the cross of Saint George in the canton, having a green pine tree in the first quarter. The other had a blue ground. Sometimes the figure of a hemisphere took the place of the pine tree, but the pine was the favorite symbol. Massachusetts also imprinted the pine tree on coins which were made in the colony.

The passage of the Stamp Act by the British government in 1765 was the beginning of the trouble between England and her American colonies. From that date until June, 1777, when the United States Congress adopted the national standard, flags of many kinds made their appearance in different sections of our country. Determined to resist the Stamp Act, the colonists raised liberty poles everywhere. A flag flying from one in New York had the word "Liberty" upon it. In New Hampshire one bore the legend, "Liberty, Property, and no Stamps." The patriotic citizens of Charleston, South Carolina, captured a fort in which the stamped paper had been placed by the king's officers, and hoisted over it a flag of their own,—blue with three silver crescents upon it. The "Sons of Liberty" of Boston held meetings under a "liberty tree," above whose leafy top a red flag waved in the breeze.

The banners used by the American Patriots during the Revolution make a very interesting study. What is supposed to be the oldest one in existence may be seen at the Bedford, Massachusetts, Public Library. It was carried by the Bedford Minute Men at the Concord fight, April 19, 1775. This flag is of a maroon color and displays an outstretched arm, the hand grasping an upraised sword. Crossing the sword blade is a scroll inscribed, "*Vince aut Moriri*," which means "Conquer or Die." Near the arms are silver circles which are supposed to represent cannon balls. The arm and sword are also of silver. The scroll is gilt.

The flag of the Philadelphia Troop of Light Horse (1775) had a canton displaying thirteen alternate blue and silver stripes. Its ground was yellow with an elaborate device in the center. This ancient flag is still carefully preserved.

It is supposed that the "Pine Tree Flag" was used during the Battle of Bunker Hill. Soon after that event the Connecticut troops were supplied with standards of different colors. On each flag were the arms of the colony, and a Latin motto signifying "God who transported us hither will support us."

The rattlesnake became a favorite device all over the country. One "Rattlesnake Flag" had thirteen alternate stripes of red and blue, with a mottled black and white snake crossing it diagonally. Another, used in South Carolina, had a yellow ground with a coiled snake in the center, and beneath it the words "Don't Tread on Me."

At Poughkeepsie, New York, the Patriots' flag, in 1775, was inscribed on one side "The King," and on the other "The Congress and Liberty." A flag at New York City had the words "Geo. Rex and the Liberties of America." Few people at this date had seriously thought of the colonies separating from Great Britain. They wanted their liberties and were determined to secure them, but they were still loyal to King George III.

In July, 1775, a standard presented to General Israel Putnam was unfurled to the air. It was the red flag of the Third Connecticut Regiment and, besides the motto already described, bore the words "An Appeal to Heaven."

In 1776 Massachusetts adopted a flag for the use of vessels. It was white with the old favorite design of a pine tree in green and the legend "An Appeal to Heaven."

In Independence Hall, Philadelphia, you may see an old Revolutionary flag. It is of green silk and has a white canton having a blue field with a green pine tree surrounded by a circle of chain links. Each link is grasped by a hand issuing from a cloud. This flag is thought to have been used by a company of Newburyport, Massachusetts.

There is still preserved a flag which was used at the battles of Princeton and Trenton. It is of crimson watered silk and has the old English union jack—the crosses of Saint George and Saint Andrew—on a blue field in the upper right corner. At the left is a rattlesnake coiled to strike, and beneath it is the motto "Don't Tread on Me."

The various flags which I have mentioned are but a few of the many kinds used at the beginning of the Revolution. There is not space to describe them all. There were some which showed devices of thirteen arrows in a hand, and thirteen arrows held in the claws of an eagle. The number thirteen represented the thirteen colonies. Before the opening of the war they had been quite independent of each other. But after the trouble with Great Britain began they saw that they must stand by one another if they would protect their liberties.

After a time the leading men of the colonies decided that it would be a great convenience to have a national flag. Late in 1775 Congress fitted out a fleet of armed vessels, and it was thought wise to use the same flag for the army and the new navy. So a committee, with Benjamin Franklin as its head, was appointed to go to Cambridge, Massachusetts, for the purpose of consulting with General George Washington, who was there in command of the American army, about the matter.

General Washington and the committee decided upon a design that they thought would exactly express the feelings of the colonies. The ground of this flag consisted of thirteen alternate stripes, seven red and six white. These stripes, of course, stood for the thirteen colonies. In the canton they retained the "king's colors," the crosses of Saint George and Saint Andrew on a blue field, representing the loyalty of the colonies to the mother country despite her oppressive acts.

The new "Union Flag," as it was called, was first unfurled at the camp in Cambridge on January 2, 1776. It was greeted with thirteen cheers and a salute of thirteen guns.

It is not quite certain who first hoisted this flag over an American naval ship. The honor has been claimed for Captain John Paul Jones, afterward so famous as a sea fighter. Captain Jones, himself, wrote, "I had the honor to hoist with my own hands the flag of freedom, the first time it was displayed on the Delaware." He does not state just what banner he meant by the "flag of freedom," but it is supposed that he referred to the "Grand Union," though some have contended that he displayed the Rattlesnake Flag. The vessel on which the "flag of freedom" was raised was the "Alfred," and perhaps it carried both flags. But whether or not Captain Jones deserved the credit claimed for him, one thing is certain, and that is that, in February, 1776, there sailed out of Philadelphia a little fleet of armed vessels under command of Commodore Esek Hopkins of Rhode Island. This fleet, the beginning of the United States Navy, went to sea under the new "Union Flag," with its American stripes and British crosses.

Had Great Britain ceased her oppression and given the colonies the rights and privileges they asked for, they would doubtless have gladly remained under her protection. But King George III and his ministers were not wise. They did not understand the American spirit. So they continued to try to force the colonies to give up their liberties. And the result was that the colonies at last determined that they would govern themselves. On July 4, 1776, they declared themselves free and independent States. This "Declaration of Independence" was a bold and daring act, but the Americans loved liberty above all other things.

Between 1776 and 1777 quite a number of striped flags came into use. In July, 1776, the "Shark," sloop of war, displayed an ensign having "a field of white and yellow with thirteen stripes."

Several vessels are known to have displayed flags with red grounds and thirteen stripes in the canton. The white flag, with the pine tree and the motto "An Appeal to Heaven," still retained its popularity. At the Battle of Long Island an American banner appeared which was of red damask inscribed with the word "Liberty." One carried at the Battle of White Plains bore the motto "Liberty or Death."

As time went on, however, the need of a flag for the new nation became more and more evident, and on June 14, 1777, Congress passed the following vote:

"*Resolved*, That the flag of the thirteen United States be thirteen stripes alternate red and white; that the union be thirteen stars, white in a blue field, representing a new constellation." *

Perhaps we shall never know exactly why the stripes and stars were chosen for the design of our standard. People differ very much in opinion regarding the matter. Some people suppose that the idea of the stripes was suggested by the old Dutch flag of red, white and blue, which has before been spoken of. Others contend that they were used to represent the stripes that decorated the coats of the Continental (American) soldiers. Still others believe that the devices of both stars and stripes were borrowed from the coat of arms of the Washington family. But there is nothing to show that such was the case. Washington himself said, "We take the star from Heaven, the red from our mother country, separating it by white stripes, thus showing that we have separated from her, and the white stripes shall go down to posterity representing liberty." These words seem to explain the design of the flag very clearly.

During Revolutionary times, Mrs. Elizabeth—more commonly called Betsy—Ross lived in Philadelphia, in a home which is now Number 239 Arch Street. Mrs. Ross was an upholsterer by trade. According to the tradition preserved by Mrs. Ross's descendants, General Washington and a committee appointed by Congress called at the Arch Street house, in June, 1776, and asked Mrs. Ross to make a flag from a pencil drawing, the design of which was that of the stars and stripes. The pencil design showed stars having six points. Mrs. Ross called attention to the fact that a star, to be correct, should have but five points, and cut a five-pointed one from paper. Washington and his companions then decided that the stars should be five-pointed upon the flag.

Mrs. Ross made the banner, after the drawing had been still further altered, and it was the design of this flag that was adopted by Congress a year later. Afterwards she was employed for several years as flag maker for the United States government. The house on Arch Street was purchased some years ago by the "American Flag House and Betsy Ross Memorial Association." On June 14, 1911, a tablet in honor of Betsy Ross was dedicated at the house by the "Flag House Chapter, Daughters of the American Revolution."

It is supposed that in the flag of 1777 the thirteen stars were arranged in the form of a circle. It is said that General Washington suggested the circle as signifying that no one state was superior to another.

There is little doubt that the new flag of the United States was first displayed on land in the state of New York at Fort Stanwix, where now stands the city of Rome. In August, 1777, the fort was besieged by a body of the enemy's forces. At the time it was without a flag, but the officers and men were equal to the occasion and a hastily made banner soon floated from one of the bastions. The soldiers' shirts were cut up to form the white stripes and stars, bits of red cloth—or, as one story has it, pieces of a woman's red petticoat—supplied the red stripes, and the blue field of the union was made of a piece of Captain Abraham Swartwood's blue cloak. A few days later Colonel Marinus Willett made a sally from Fort Stanwix and captured five of the British ensigns. These were hoisted on the flagstaff below the impromptu American flag.

Some patriotic ladies of Philadelphia made one of the new flags and presented it to John Paul Jones. Tradition says that he was so delighted with it that he procured a small boat and sailed up and down the Schuylkill River, displaying their country's standard to the crowds who gathered on the shores to gaze upon it.

John Paul Jones was the first man to induce a European power to recognize the American flag on the seas. In February, 1778, his brig, the "Ranger," flying the stars and stripes, was saluted by the French fleet in Quiberon Bay. In April, 1778, the "Ranger" had an engagement with the British ship "Drake." This was the first action engaged in by a ship carrying the United States flag.

The stars and stripes waved for the first time over a foreign fortress in January, 1778, when Fort Nassau, on the island of New Providence, was captured by Captain John Rathbun and his crew of the United States sloop-of-war "Providence," assisted by a handful of Americans who had succeeded in making their escape from British prison ships.

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*This date, June 14, is accepted as the birthday of the present United States flag, and is celebrated in the schools as Flag Day.

The ship "Bedford" of Nantucket was the first vessel to carry the flag into English waters after the surrender of Cornwallis. On February 6, 1783, she appeared in the Thames River flying the United Sates colors, and excited great curiosity and interest.

From 1777 to 1795 the flag of thirteen stripes and thirteen stars remained the national standard. During that period, however, Vermont and Kentucky entered the union. In recognition of these Congress voted, January 13, 1794, that "from and after the first day of May, one thousand seven hundred and ninety-five, the flag of the United States be "fifteen stripes, alternate red and white; and that the union be fifteen stars, white in a blue field." In this new flag the union extended from the first to the fifth red stripe. The stars were arranged in three rows having five stars in each.

In 1787 the ship "Columbia" left Boston, returning in 1790 after having carried the flag of thirteen stars and stripes around the world. In 1797 the ship "Betsy" of New York carried the fifteen stars and stripes around the globe.

This flag remained in use for a period of twenty-three years after it came into existence. It was the "Star Spangled Banner" of which Francis Scott Key wrote in 1814. You are all familiar with the beautiful words and inspiring music of the song.

Francis Scott Key was a lawyer of Baltimore. In September, 1814, he left that city under a flag-of-truce and went aboard one of the British ships for the purpose of obtaining the release of a friend who had been taken prisoner by the British and was confined upon a ship of the fleet then occupying Chesapeake Bay. The enemy were preparing to bombard Fort McHenry, and Key was detained by them. From his vessel he witnessed the bombardment which, fortunately, was unsuccessful. The song truthfully describes what the writer actually beheld with his own eyes. A portion of it was written on board the ship. It was completed on shore that same day, after he and his friend were released, and was immediately printed.

The very flag that floated over Fort McHenry, and for whose appearance Key so eagerly watched "by the dawn's early light," is still preserved in the National Museum at Washington. The stars in its union are arranged in five lines of three stars each. The old banner is full of rents made by the shots of the foe.

The flag of fifteen stripes and stars had a most honorable career. It waved aloft from "Old Ironsides" (the ship "Constitution") when that was launched at Boston in October, 1797. It floated over Lake Erie in 1813 when the gallant Perry "met the enemy" and conquered them, and beneath its folds Jackson's men fought behind the cotton bales at New Orleans in the last battle of the War of 1812.

In 1817 it was proposed that a new national standard should be adopted. For this a design was made showing twenty white stars in a blue field in the upper left hand quarter, and the figure of Liberty in the lower left hand quarter. The upper right hand quarter was occupied by a spread eagle holding a shield, the lower by thirteen alternate stripes of red and white. It was not a beautiful design and was not adopted.

On April 14, 1818, Congress passed an "Act to Establish the Flag of the United States." This act declared that from and after the fourth day of July next ensuing, the flag should have "thirteen horizontal stripes alternate red and white;" and that the union should display "twenty stars, white in a blue field." It also provided that on the admission of every new State to the Union a star should be added to the union of the flag, and this has been the regulation ever since. The new standard was first hoisted on the flagstaff of the House of Representatives, April 13, 1818. It showed the twenty stars arranged to form one large star.

The device of one large star did not meet with universal favor, and, as Congress had made no rule regulating the arrangement of the stars, people generally consulted their own tastes in the matter. Most flags retained the old pattern of horizontal lines. Others had the stars scattered over the blue irregularly or in the form of anchors, circles or diamonds. Sometimes the stars were made to represent the letters U. S. These various designs were very puzzling to foreign nations and the question was often asked, "What is the United States flag?" As years went on, the horizontal line arrangement came more and more to be regarded as the best. One rarely ever sees a flag now showing any other.*

You have read about the Civil War, when the Southern states revolted from the Union and called themselves the "Confederate States of America." These Confederate States had four different banners in use while their struggle for independence lasted.

The first of these was generally known as the "Stars and Bars." It was adopted by the Confederate Congress in session at Montgomery, Alabama, March 4, 1861, the day upon which Abraham Lincoln was inaugurated President of the United States. The ground consisted of two red stripes and one white one of equal width, the white occupying the center. A blue union, extending the width of two stripes, contained a circle of seven white stars, the number of the Confederate States.

This flag was found to bear too great a resemblance to the United States ensign to be of good service. On the battle field it was the cause of much confusion and many mistakes. It was soon superseded by the "Battle Flag," which continued in use throughout the war. The "Battle Flag" was designed by General Pierre G. T. Beauregard. The ground was red and traversed throughout its length by a blue diagonal cross, displaying one central white star, with three more stars in each of the four arms, the states having increased to thirteen. This banner was often called the "Southern Cross."

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*The Bureau of Ordnance of the War Department at Washington decides on the arrangement of the stars on the addition of a new state, and this is followed in all Government flags, as well as the most of those manufactured for commercial purposes.

On May 1, 1863, the Confederate Congress adopted a new national ensign. This had a pure white ground with the "Battle Flag" in the canton. But this flag, also, proved unsatisfactory as it was liable to be mistaken for a flag of truce. So, on March 4, 1865, the Congress changed its design by adding a red stripe to the white ground. But the flag had a short career as, soon after its adoption, Lee's surrender put an end to the war. Now the stars and stripes float over all this great land, and Southern hearts are as loyal to it as are Northern.

You frequently hear the flag spoken of as "Old Glory." The name is a very appropriate one. There is an original "Old Glory," and its history is very interesting. It belonged to Captain William Driver, who was born in Salem in 1803, and removed to Nashville, Tennessee, in 1837. In 1831 Captain Driver was presented with the flag by the women of Salem, as he was about to leave with his ship on a trip around the world, and christened it "Old Glory." After using it upon his brig, the "Charles Doggett," he carried it to his Southern home. At the breaking out of the Civil War the Confederates tried to seize the flag and searched Captain Driver's house pretty thoroughly. But the shrewd Yankee had carefully sewed it into the cover of his bed and it was not discovered. On February 25, 1862, the Federal troops entered Nashville and "Old Glory" was unfurled from the flagstaff of the state capitol. *

Some of the finest poems ever written have had for their subject the United States flag. One of the most famous of these, "The Star Spangled Banner," has already been referred to. Another famous one, "The American Flag," was composed by Joseph Rodman Drake and published in 1819, the last four lines having been supplied by Fitz-Greene Halleck, an intimate friend of the poet.

"The Flag of Our Union"
years previous to the Civi
George P. Morris, a journa
in New York City in 1864
of the Ocean," popularly c
and Blue," was the composition
actor, Thomas Becket, of Philadelphia, and
first published in 1843.

Of later day poems, one of the most popular is "The Flag Goes By," by Henry Holcomb Bennett. "A Song for Flag Day," by Wilbur D. Nesbit, is a spirited ode, and true patriotism breathes from every line of Margaret E. Sangster's "Our Flag." There are many other inspiring songs and lyrics with the flag as the theme.

The officers and men of the Army and Navy are required to display the greatest respect to the flag. On a United States ship-of-war the flag is hoisted at eight o'clock and flies until sunset. At military posts and forts the flag is hoisted at *reveille,* and so remains until sunset. At evening *retreat* the "color guard" lowers the colors. They are saluted by the regiment and the band plays "The Star Spangled Banner," making the ceremony very impressive.

The American flag is one of the oldest standards in existence. It is older than the flags now in use in Great Britain, France, Germany, Italy, Spain, Portugal and the South American States. It is older, even, than the modern flags of China and Japan. It has never been conquered. In wars with Great Britain, France, Tripoli, Mexico, the Confederate States and Spain, it has always been victorious. In the United States it has supplanted the English, French, Spanish, Dutch and Swedish flags. It has been planted in Alaska, Hawaii, the Philippines, Cuba, Porto Rico, Guam, Tutuila and Panama, and even at the North Pole.

With every year the story of our glorious banner is more reverently studied. The people of every nation are learning it. To them the American Flag is the symbol of hope and happiness. Why? Because the flag stands for liberty and equality. It is not, like so many others, the emblem of tyranny and oppression. It is the "flag of the free" in every sense of the word. Dr. Oliver Wendell Holmes, the poet, has beautifully called it "The Flower of Liberty."

Every boy and girl in America should cherish the flag as their dearest possession. The Flag Salute should not be to them merely a collection of meaningless words. I am sure it will not be if they once understand what the flag tells by means of its stripes and stars, its red and white and blue.

The picture of the flag is given on page 265, in connection with that of the American, or bald, eagle. This eagle is our national emblem, and as such was incorporated into the Great Seal of the United States in 1782. The eagle typifies the United States Government. The words and music of "The Star Spangled Banner" are given on page 176, Volume One.

* It has been claimed that the original "Old Glory" flag was in the Essex Institute, Salem, Mass., having been presented to it by a niece of Captain Driver in 1886. This claim is disputed however, and the original flag is said to be now (1916) in the possession of Mrs. Roland, of Wells, Nevada, a daughter of Captain Driver, to whom he gave it in 1873. The facts of the latter claim seem to be thoroughly proven.

History Told Through Stories

By BERTHA E. BUSH, Author of "Great European Cities," etc.

Two Little Pilgrims of Plymouth

The Pilgrims who came to New England in 1620, landing at Plymouth, were a band of Puritans who had separated themselves from the Established Church of England and on account of persecution and inability to worship God in their own way, had gone to Holland in 1608. Though welcomed in Holland and prospering there, they did not desire to become part of the Dutch people, or have their children grow up as such. They therefore decided to go to America and occupy part of the English territory there. They left Delft Haven in 1620 and sailed from Southampton August 5 in two ships, the *Mayflower* and the *Speedwell*. On account of the condition of the latter they returned to port, and finally sailed September 5 from Plymouth in the *Mayflower*. There were 102 persons aboard the ship, representing 41 families, and the stormy voyage lasted 63 days.

WHAT are you doing, children? Resolved, what are you hiding behind your back? Perseverance, you are hiding something too. Show me what it is, this minute."

Reluctantly the little boy and girl drew their hands from concealment. It was not safe to disobey Humility, for she believed in the strictest Puritan discipline. She was stricter with the two children than their mother, Susanna White, who was lying in her berth with the new baby Peregrine at her side.

"It is only bread, Humility. I heard you and Desire say to each other that there was only a little flour left in the Mayflower and few supplies beside, and that you feared we might all starve. And I thought we had better begin to put away a part of our portion daily, so that mother and the baby wouldn't starve."

The girl's keen eyes softened, as the eyes of every one on board the Mayflower were apt to do when that precious new baby was mentioned. She knew that little Peregrine's brother and sister were making a real sacrifice. She knew just how hungry they were, for she was hungry herself.

"Eat your bread," she said quite gently. "We are not going to starve even though our store of provisions may be low. Master Carver spoke to the men particularly as they started out yesterday, and told them to seek out some Indians and purchase food from them. Eat your bread. It is little enough."

Perseverance and Resolved ate their morsels obediently, but hungry though they were, they made wry faces when it went down. Bread made

The Mayflower in Plymouth Harbor

of mouldy flour wet with sea-water is not good to the taste. But it was not this that made the tears spring to Perseverance's eyes. She clutched Humility's hand, trembling.

"Oh, Humility, I am so afraid of those savage Indians. I am so afraid they will kill my father and the other men who have gone out exploring."

Settler's Cabin

To the amazement of the two children, Humility's face suddenly turned white.

"I'm afraid, too," she whispered. Then Resolved grew mentally a foot taller. It had never struck him before that Humility could be frightened. A mighty sense of manliness sprang up in his boyish soul. In a flash it came to him that Humility and his mother and all the women in the Mayflower were only little girls like Perseverance grown tall. The men were gone. He must take care of them.

"Don't be troubled," he said in a tone quite different from the small-boy one he had used a moment before. "We need not fear while Captain Miles Standish is with them. He is brave enough and wise enough to overcome savages. No harm can come to the men while he is leading them."

"He can't keep the savages from shooting at them," answered Humility, but she felt comforted.

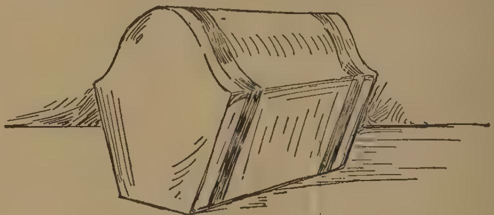
The Mayflower lay at anchor in Cape Cod Bay, and the men had set out in the shallop to find a place along the shore to build their new homes. Perseverance and Resolved had hung over the gunwale to watch them, although it was so bitter cold that even the bright sunshine did not take off the chill. The children had never before seen a climate like this, and neither, in truth, had the grown-ups. White lay the snow on the hills in front of them. The trees that came down to the water's edge were loaded with snow. The snow was so deep that those who landed on shore fairly floundered in it. They had never seen such snow in England. They had never felt such cold in England. It was only November, and yet the salt spray froze on the garments of the men who put off in it and on the cordage of the ship until it was encased in rattling ice.

Baby Peregrine and His Cradle

"O-oo!" shivered Perseverance, "I thought when we got to land we could get off the ship, and I know mother thought so too. I'm so tired of staying on shipboard. It's so dark and so crowded and so damp and it smells so. And when I come up on deck it's so cold I am like to freeze."

"Never mind," said Humility, consoling in her turn. "A girl who has as nice a new baby brother as Peregrine ought to be thankful anywhere."

"We are thankful," answered Resolved for her. "But, Humility, it was but thinking of baby Peregrine that made us want to save the bread. If we do not get some provisions from the Indians there is danger of starving. I think we had better put aside a portion of our food allowance every day to serve if dire need comes."



Chest That Came Over in the Mayflower

"Wait till Master Carver tells you to do so," said Humility. "It is little enough as it is."

But Governor Carver did not need to give any such order. The exploring party came back with ten bushels of a strange new grain which some called Indian corn, and others Guinny wheat or Turkie wheat. It was yellow and hard, but the women, looking at it, pronounced their decision that it might be made eatable by being boiled for many hours. Miles Standish's great iron pot was got out and the corn set to boiling at once.

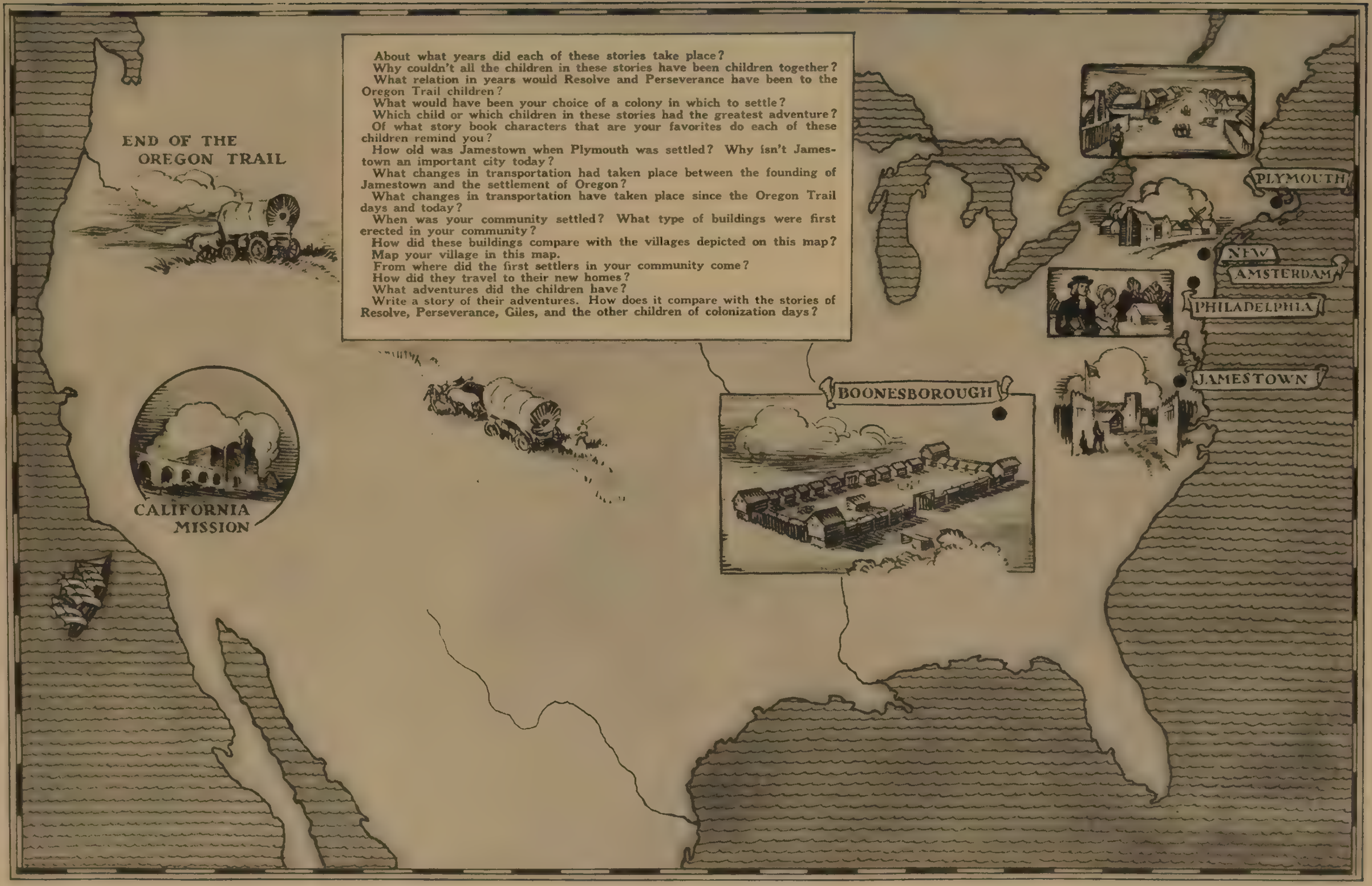
"Did you get it of the savages, father?" asked Resolved.

"Yes, but not from live savages. We found it buried in an Indian graveyard. The only thing we got from the live savages is this."

He held out a handful of arrows, some tipped with brass and some with eagles' talons. The children shuddered.

"Did they shoot them at you, father?" asked Perseverance in a quavering voice.

"Yes, they shot them at us. But



About what years did each of these stories take place?

Why couldn't all the children in these stories have been children together?

What relation in years would Resolve and Perseverance have been to the Oregon Trail children?

What would have been your choice of a colony in which to settle?

Which child or which children in these stories had the greatest adventure?

Of what story book characters that are your favorites do each of these children remind you?

How old was Jamestown when Plymouth was settled? Why isn't Jamestown an important city today?

What changes in transportation had taken place between the founding of Jamestown and the settlement of Oregon?

What changes in transportation have taken place since the Oregon Trail days and today?

When was your community settled? What type of buildings were first erected in your community?

How did these buildings compare with the villages depicted on this map?

Map your village in this map.

From where did the first settlers in your community come?

How did they travel to their new homes?

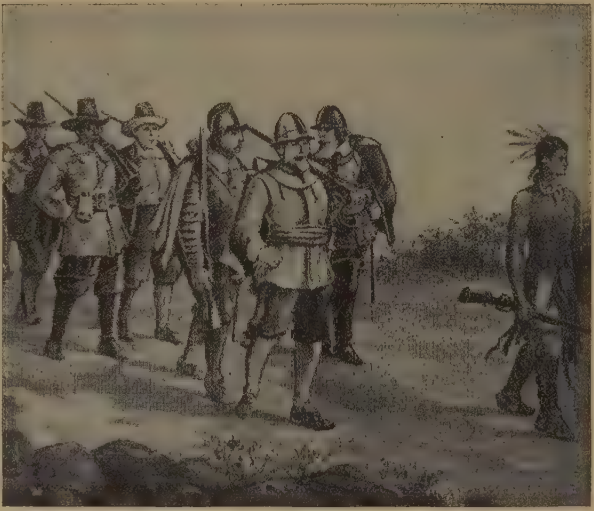
What adventures did the children have?

Write a story of their adventures. How does it compare with the stories of Resolve, Perseverance, Giles, and the other children of colonization days?

A PIONEER QUESTION MAP
(To be used with History Stories)

Cope

Departure of the Pilgrims from Delft Haven, 1620


The Army of Miles Standish

they ran away as soon as they had shot them. They were evidently afraid of our guns and our doughty captain."

The exploring party had found a place for their village across the bay. Very soon the Mayflower pulled up her anchor and sailed across. But even then it was many days before the women and children could leave the ship. Homes must be built before they could be occupied, and the men must not only build houses; they must cut down the logs of which to build them before they could begin, and all in the winter weather with short days, bitter cold, and snow and storms such as they had never seen before.

The first thing they built was a platform of logs on which they mounted their cannon to defend themselves against the savages if they should attack. Then they erected a large "common house" where the men could live while they were working and not have to row through the icy sea each morning and evening to the ship. The cold was something they had never dreamed of. They got wet to the skin; their wet clothing froze on them, and there was no way to dry or warm themselves save at great outdoor log fires which the falling, drifting snow did its best to put out.

Bayes

Departure of the Mayflower

In the Mayflower and in the log house on the shore they sickened until there were scarcely enough who were well to tend to the sick.

And there came other misfortunes. One morning very early there was a terror-stricken cry on shipboard:

"The house on shore is on fire!"

The women left on board the Mayflower crowded up the narrow hatchway and on to the deck in the cold and darkness, and wrung their hands in helpless anguish.

They could see flames shooting up, reddening the darkness with a horrible light, but it was impossible to so much as send a boat ashore until the tide came in. To see it and be a mile and a half away and able to do nothing—oh, it was awful!

"Don't cry," said Resolved bravely to Perseverance. "It makes the others feel worse. We must say something to cheer them up."

And they moved from one to the other whispering that they were sure that the men would be able to put the fire out.

"They are only children and don't realize," said the women, but nevertheless they felt comforted. And, as it happened, the children were right. The fire was put out when the building was only half burned. The stores in the upper part were consumed, but the guns and powder and shot, the most necessary of all things for their safety, were saved.

At last the half-dozen little log houses were built and the families moved into them. But now the sickness became sorer than ever. Half of the little company died, among them William White, the children's father. Then Resolved put his arms around his sobbing mother and drew himself up so tall that he almost reached to her shoulder.

"Don't be troubled, mother," he said. "I'm your man. I'll take care of you and Perseverance and Peregrine."

All that cruel winter a whisper had been passing from one pair of white lips to another; a whisper too dreadful to be spoken aloud. "The worst has not yet come. The worst has not yet come."

"What do they mean?" asked Perseverance of Resolved. "What can be worse than this?"

"They mean the Indians," answered the boy. "They fear that the savages will fall upon us and kill and scalp us all and burn our houses. They think they may be only waiting till winter breaks up."

The thought took away all pleasure in the springtime. It seemed as if it might be true, for not an Indian had they seen since the band of savages had fired upon the exploring party and run away. Day by day the little company scanned the blue hill above them anxiously, fearing to see a hostile band of savages appear over it. The men took their guns with their spades and hoes when they went out to work at the planting. The women barred the doors of their little cabins, and the children scarcely dared to play on the street in front of their homes.

It was in March that Humility Cooper came dashing up to Mistress White's door with a face as white as chalk. Perseverance was rocking baby Peregrine in the famous hooded cradle that may still be seen in Pilgrim Hall in Plymouth. Resolved was making a garden outside, but he dropped his spade and ran into the house when he saw Humility's face.

"Indians!" Humility gasped, dropping down on the chest in which Mistress White's possessions had crossed the ocean, as if her limbs had suddenly become too weak to bear her weight. But she sprang up again and snatched baby Peregrine from the cradle.

"We must hide!" she cried, looking wildly about.

"How many Indians, Humility? Where are they?"

Resolved made himself speak calmly because he felt that he was the man of the house, but his heart leaped up into his throat.

"Only one! Coming over the hill. Hide! Hide before he gets here!"

"It won't be necessary to hide from just one Indian," said the boy sensibly. "If they were coming to attack us there would be a band. I will go and see about it and come back and tell you. Don't be troubled!"

He ran up the street, with his mother and Humility and Perseverance peering after him through the door held half-closed. To say that he was not afraid would not be telling the truth. He was only a boy, and the men and women were afraid. Straight to the storehouse the savage was stalking in stoical Indian fashion, looking neither to the right nor left. The men hastened to go forward and meet him. Resolved was glad that Captain Miles Standish chanced to stand beside him. It made him feel safer. The Indian reached out his hands. Resolved listened to hear a blood-curdling war-whoop.

"Wel-come, In-glees!"

Not one of them understood at first; they had been so sure that he would speak in some outlandish savage tone. He repeated it and then there could be no mistake. It was a message of friendliness.

"Wel-come, In-glees!"

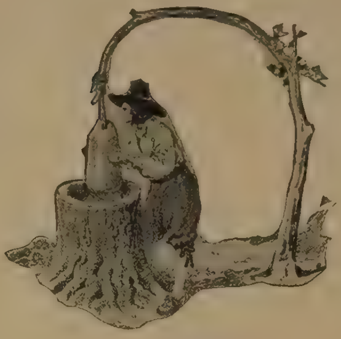
"What are you hiding behind your back?"

Children may copy and color this drawing free hand, or they may trace the design by using thin paper or carbon paper.

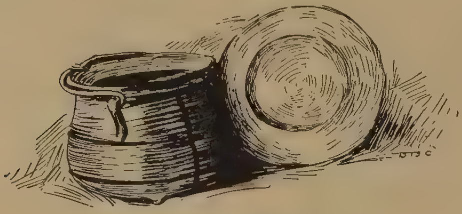
It was Resolved who gave the whoop It was a boyish whoop of relief. But no one noticed it. They were crowding around Samoset, asking him questions. Resolved raced back to the cabin like a bounding deer of the forest.

"It's a friend! a friend!" he cried exultantly. "Come, Perseverance! come, Humility! come, mother! There is nothing to be afraid of. Come and see him."

In your histories you can read how good a friend Samoset was to the little colony. In six days he came again, bringing another Indian named Squanto, and Squanto was the greatest help they could have had.



Squanto's Mill



Standish's Platter and Kettle

Resolved and Perseverance and even baby Peregrine soon grew to be great friends with the young Indian. It was Squanto who showed Resolved how to plant his corn with three small herrings in each hill as a fertilizer, and how to tend it and care for it. But it was to Perseverance that he showed something which became for years the main dependence of the little colony. With the instinct of the hospitable housewife, she divined one day that this strange guest was feeling hungry, and she brought out to him one of their precious trencher bowls filled with the boiled corn, and a shining pewter spoon. He ate it politely—very politely for an Indian—and then abruptly left the village. They saw him no more till he came back the next day to get a burning brand from the fireplace.

"What are you doing, Squanto?" Resolved asked the Indian.

"Come, see!" answered the laconic Indian. He led them to a place where a tree had been cut down, leaving quite a high stump. On this stump Squanto proceeded to make a fire, scraping the wood away with a clamshell as it burned until he had fashioned the stump into a great bowl big enough to hold half a bushel of shelled corn. Next he made a great block from a portion of another log and shaped it so that it would fit into the bowl.

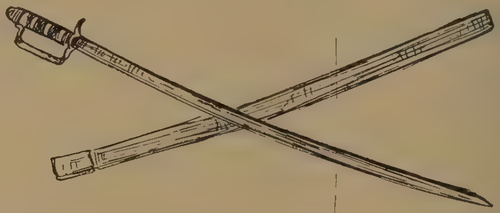
"What are you doing, Squanto!" asked Resolved again, quite puzzled.

"Make something to pound corn in for sister. Then make something good," he answered.

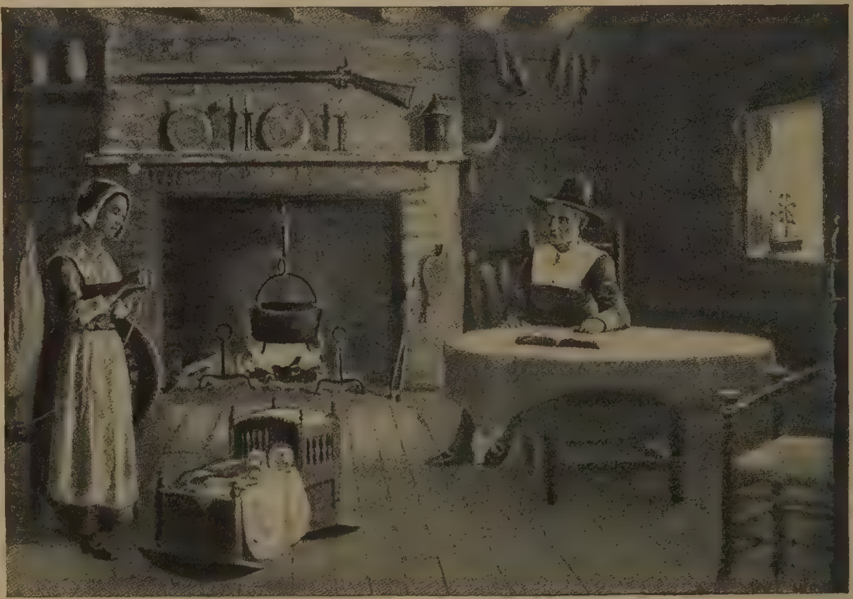
With strong straps of deerskin he fastened the heavy block to the top of a slender young tree. Then he pulled it down until it thumped mightily in the bowl he had made in the stump.

"It's a mortar!" cried Resolved. "It's a mortar and pestle!"

The Indian did not understand those words, but he nodded and smiled at the little girl. He had brought some corn from the Indian village. He filled the wooden hollow and brought the springing pestle down with all his might again and again, crushing the corn to meal.



Standish's Sword



Old New England Room with Stone Fireplace

Embarkation of the Pilgrims

Weir

"Thump, thump, thump!" went the improvised mill. By this time almost all the colony had gathered around to see. They felt that something remarkable was taking place.

But it was not to any of the Pilgrim mothers that Squanto presented the Indian basket of yellow corn meal. It was to little Perseverance with her cheeks flushed and her blue eyes shining.

"I show you how to cook," he said.

In a sort of procession they passed to Mistress White's cabin. The great iron pot was brought out, filled with water and set over the hot coals till it boiled. Gravely Squanto stirred in the yellow meal, a little at a time, with a flat paddle. It thickened and bubbled and spluttered. He cooked it for an hour, stirring frequently. Then he lifted the kettle off the coals and instructed Perseverance in his broken English to get out spoons and bowls. A portion was served to each one present.

Miles Standish took the first mouthful. It was hot and burnt his mouth, but the brave little captain made no complaint.

"Methinks with salt it would be *very* good," he said.

The Indian, who was not used to salt, refused to have his dish seasoned, but the others accepted the addition and pronounced it enthusiastically to be one of the most delicious foods ever eaten. Squanto lifted up a spoonful of it, let it cool thoroughly, and held it toward baby Peregrine.

"Good for papoose," he said. And little Peregrine swallowed it eagerly, and laughed and gurgled and reached out for more.

After that, corn meal mush, or Indian pudding, became indeed the chief food dependence of the struggling colony. Morning, noon and night they ate it. Squanto taught them how to make maple sugar. Sweetened with this, the Pilgrims considered the mush a great delicacy. They spoke often as they ate it of how afraid of the coming of the Indians they had been and what a blessing their Indian friends had proved. Historians say that

Pilgrims Going to Church

"Welcome, In-glees!"

This design may be copied free hand, or the children may trace it by putting paper thin enough to see through over the picture, and then transferring to a heavier paper by laying the thin paper down and marking heavily on the lines.

Plymouth colony could scarcely have survived without the friendly offices of Squanto and Samoset.

"The worst is yet to come," the Pilgrims had said in bitterness. But it was one of the best of God's providences that came to them when Samoset and Squanto, savagely arrayed in beads and feathers and fringes, but with hearts of pure friendliness, stalked down the single Plymouth street.

"Squanto is one of the best friends anybody ever had," said Resolved and Perseverance, and certainly they spoke the truth. And certainly we think they deserved the best of friends, this brave little Pilgrim boy and girl of Plymouth.

A Boy and Girl in Early Virginia

At the beginning of the seventeenth century, England was very eager to colonize the new world. There were many people out of work, who looked to better their condition. It was believed that English wares could be exchanged for raw materials from such colonies as might be planted. There was a surplus of capital in England, seeking investment in new enterprises. Therefore, in 1606, a company of prosperous and prominent Englishmen obtained from James I a charter—or permission—to plant colonies on the American coast. The territory was to be exploited by two groups of adventurers; the Plymouth Company in the North, and the London Company in the South. The London Company settled Jamestown, Virginia, in 1607. The location was unhealthy. The colony at one time consisted of seven laborers and fifty-two "gentlemen," too proud to work, but not too proud to hunt gold all summer and beg all winter. They were saved from the consequences of their folly by Captain John Smith, a brave soldier of fortune who was one of the council.

SEE what I have brought you for your supper! It is something you never tasted before, and I think you have never tasted anything so good."

It was a bowl of steaming hot oyster stew which the cook had concocted from those strange shellfish called oysters that had been found in such abundance in Chesapeake Bay.

The hands that were lifted to receive the bowl were chained, but Captain John Smith, to whom they belonged, smiled at the boy brightly. Twelve-year-old Giles was the only boy in all the shipload of adventurers who were now sailing to plant the first English colony in the new world. When his father had heard in England of that wonderful coast called Virginia, where, it was told, the earth was full of gold and the rivers flowed over golden sands, he said to Giles:

FUN WITH PICTURES

I. "What are you Hiding Behind Your Back?"

Humility was a pretty Pilgrim maiden. Her hair was golden, her eyes blue fringed with black eyelashes; and her cheeks were as pink as her lips were red. Her clothes were simple and plain. Her dress was a deep gray with a large white collar and deep cuffs of the same color. She also wore a white cap and a white apron. Perseverance White was a miniature Humility in dress. How was she dressed? Resolved White wore a suit of black with a collar and cuffs of white. His hair was black, his eyes blue, and his cheeks were sunburned. Make your picture a portrait of Humility, Resolved and Perseverance.

II. "Welcome, In-glees!"

Samoset was a friendly Indian. He was the first Indian to call on the Pilgrims. On that visit, he wore a robe of fringed doeskin, a string of many colored beads, with a turkey feather in his hair. His dress was certainly not like that of the Pilgrim fathers. They wore dark suits, white collars, large black hats, and leather boots.

Color your picture to look as did the Pilgrim fathers and Samoset.

"If it were not for you, son, I too would go with the ship the London Company is sending out there and make a fortune for us."

"Oh, do go, father, and take me," Giles had cried.

"How could I take you? Only men are to go."

"I am a man," cried Giles, drawing himself up as tall as he possibly could. "I'm very tall and strong for twelve years. Oh, father, do go and take me."

In the end his father had yielded to his pleadings and taken him, for there was no mother or aunt or grandmother with whom to leave him. Perhaps one reason why Giles wanted to go so much was that Captain John Smith was going.

Captain John Smith was a hero in the boy's eyes. He was a soldier, and his life had been full of marvelous adventures. He had fought with the Turks and slain three in single combat. He had been sold into slavery, and had killed his cruel master and escaped. Oh, no one else was so wonderful to Giles!

It almost broke the boy's heart when his hero was put in chains. He had begged of the cook the privilege of taking the prisoner's meals to him, and the cook, who loved Smith too, took care to make them savory.

It was just because he was so popular with all the commoner sort that Smith's jealous associates had seized upon a pretext to put him in confinement. They pretended that they feared he might take advantage of his popularity to usurp the government. But Giles's mourning was turned into rejoicing when the box of sealed orders given by the London Company was opened in Chesapeake Bay, for it was found that they had appointed Smith a member of the council.

Now he must be set free; and Giles was perfectly happy as, standing by his friend's side, he sailed up the James River toward the place where the ruins of the old church now mark all that is left of Jamestown.

It was a wonderful day in May. The shores of the river seemed carpeted and hung with emerald velvet, wondrous green velvet that was alive and waved and swayed in the sunshine. On the breeze came the most deliciously sweet smell, the smell of ripe strawberries. The landing from the ship was made beside a bank that was full of them, and oh, how the colonists feasted.

"Now to get gold!" they cried. Without stopping to unload their possessions or make themselves the smallest shelter, they rushed off to scratch the earth or dip up the sands of the river, expecting that gold would come up with every handful.

But no gold came up. They were greatly disappointed, but not discouraged. They had heard so many accounts of riches in the new world that they were sure gold must be there. Neglecting everything else, they went on hunting for it. They would not listen when Smith suggested that they build houses and plant grain. The May air was very warm and pleasant. Deer and wild duck were to be had for the shooting, strawberries for the plucking. Why should they take the time to build or to plant? They scorned the very idea. From morning till night they put in their time hunting for gold.

In a few weeks they began to reap the result of their folly. The three ships sailed for England. As long as they were anchored beside them, the colonists could go aboard and barter with the sailors for the good bread the ships' cooks made. But now they were reduced to half a pint of damaged wheat and half a pint of barley apiece each day. Then they saw the foolishness of having planted nothing. The weather turned very hot. They had no water to drink except the water of the river, and that was salty when the tide was in and muddy when the tide was out. They slept on the bare ground, damp and miasmatic.

Captain John Smith

Sickness seized them. By September, fifty of the one hundred four had died. Then a dreadful rumor was whispered around. Giles ran to meet Captain Smith one day as he came in from an exploring expedition, and the boy's eyes were fairly wild with fear.

"Oh, Captain Smith," he panted, "something terrible is going to happen! You know President Wingfield keeps all our stores locked up in his chests! They have found out that he is planning to load them on the pinnace and sail away in it to the West Indies and leave us all to starve!"

John Smith's eyes flashed, and he looked as he must have looked when he went out against the Turks in single combat. But he spoke quietly and reassuringly to the boy.

"Don't be afraid. I will see that he does not attempt such a thing. And don't be afraid of starving. I have been making friends with the Indians while the rest hunted for gold, and they have promised to bring provisions to us for the winter."

Perhaps it was a good thing for the colonists that Wingfield's rascality did open their eyes, for now they were ready to obey Smith. He put them to building houses, and he set the example by working harder than any of the others. Gold-hunting was abandoned, and the little colony became as busy as bees getting ready for winter. All day long, axes rang in the yellowing forest. Indians came paddling up the river bringing corn and other stores.

Giles was very happy then. He managed to work where Captain Smith was working, and he was so handy about fetching and carrying, so quick to see and to do what would help, so ready and willing and faithful that Captain Smith came to like to have the boy about him as much as Giles liked to stay. Thus it happened that Giles went up the river with him on the expedition whose object was to make friends with the powerful old Indian chief Powhatan.

Powhatan had summer homes and winter homes. This one by the falls of the James was his summer home. Down to the river's edge to greet the whites he stepped, as proudly as if he were the king of England. He was accompanied by a guard of a hundred warriors.

Giles did not look as much at the stern, dark old chief, with his painted and befeathered guard, as he might have done, for the reason that he was looking somewhere else. Following after the great chief at a respectful distance came his wives and daughters, and among them was a little Indian girl of about Giles's own age who had such a sweet little dark face that the boy's eyes were irresistibly drawn to it.

She was dressed in a robe of doeskin as soft and smooth as velvet, beautifully ornamented with beads and colored porcupine quills. On her round bare arms were bracelets of shells, and around her neck a chaplet of pearls. This was Bright-Stream-between-Two-Hills, or, in the Indian tongue, Pocahontas, the favorite daughter of the proud old chief. There was a good reason for her being the favorite, for her heart was as kind as her eyes were bright.

She had never seen a white boy before, and she looked at Giles as curiously as he did at her. They could not go and talk to each other. That would have been against Indian good manners. But some way they knew that they liked each other. While Powhatan and Captain John Smith palavered and bartered, the merry black eyes and the boyish blue ones gazed at each other with comrade frankness, and when the women and girls were ordered to bring food to the whites, Pocahontas took care to serve Giles with the fish and roasted deer's flesh and boiled corn and wild plums herself.

Powhatan promised great things; but they found out how much his promises were worth when they got back to the settlement. While they were away he had sent a band of warriors to attack it, and one white man had been killed and several wounded.

"I don't believe Pocahontas knew about it," said Giles, as, close to his beloved captain, he labored to make the rude fortifications stronger. "I don't believe Pocahontas knew about it."

The brief impulse to industry and caution which the fear of starving and the Indian attack had given

"Pocahontas took care to serve Giles"

Use carbon paper to transfer this picture to water color paper.

Fort at Jamestown

the colonists died down. They became careless again, and wasted the precious stores that Captain Smith had obtained by so much effort. The whites despised their red neighbors, and cheated and angered them until they would furnish nothing. And then, suddenly, starvation stared the colonists in the face.

Their only hope was that Smith might obtain more food from the Indians. But the Indians were so angry that it was as much as a white man's life was worth to venture among them.

"Don't go," begged Giles, clinging to the captain's arm, as if he would hold him back by his boyish strength. "Let somebody else go this time. It is somebody else's turn."

"I'm afraid nobody else could persuade the Indians to give us more corn," answered the captain. "It is a question" he added to himself, "whether I can."

Giles heard it. He remembered how he had overheard some of the men saying to each other that the Indians had been made so angry by the bad faith of Wingfield and some of the other unscrupulous "gentlemen" of the colony, that they would be likely to put to death by torture any colonist who fell into their hands.

"Oh, don't go! don't go!" he cried. "The savages will kill you!"

"It will be death to all of us unless some one brings help," answered Smith. "I must try to get it, my boy."

With a heart as heavy as lead, Giles saw the shallop brought out and Smith and four other men push away on the cold river. The winter wind whistled about his ears. The cold white snow lay where the carpet of green had been. Everything was desolate, and the boy managed to keep back his tears only by remembering how unmanly Smith would have thought them.

Then came dreadful days filled with gnawing hunger and terrible anxiety, days so like each other that Giles lost count completely. He could not tell how many days it was when a man, hatless, coatless, shoeless, his clothing torn to ribbons by thorns and briars, and his face full of horror, knocked feebly at the barred door of the fort, where all the inhabitants left in Jamestown huddled together. It was one of the four who had gone out with Captain Smith, and his story was a terrifying one:—

"The Indians attacked us by the river! Hundreds of them! They killed the others, but they saved Captain Smith to torture, and I got away!"

"Where is Captain Smith?" cried Giles, his shrill boy's voice rising above the others.

"They have taken him to Powhatan's village. I think they mean to burn him to death."

This was terrible, but a glimmer of hope came next day. An Indian appeared and made signs that he had a message for the whites. When after much parley he was admitted, he took from his breast as if he were afraid to touch it, a folded piece of paper, and handed it to the acting commander of the fort. It was Smith's writing, and it told that he was alive but kept a prisoner, and that he wanted some medicine sent to cure a sick Indian in the village.

There were other directions for firing off the fort guns and doing various things to terrify the Indian messenger so that he would report to his tribe when he got back that it was useless for them to attack Jamestown. They followed these directions, and succeeded so well that the frightened savage would not touch the medicine when they gave it to him to take back. To his mind it was powder and might explode with terrifying noise.

"Then we can't send it," said the colonists.

Pocahontas Saving the Life of John Smith

Giles cried out in agonized protest, "Oh, we must send it! It is the one chance to save Captain Smith. If he cures the sick man they may let him go free! Let me go and take it!"

The Indian messenger, who fully believed in the virtue of the medicine, looked approvingly at the boy.

"I take care of him," he said. "Let him go."

So Giles set out through the snowy forest to carry rescue to his beloved captain. How he prayed, as he strode along behind his Indian guide,—broken boyish prayers that were not put down in the Church of England prayer-book!

When they reached the Indian village, a solemn council was assembled in the great central wigwam. In the place of honor before the great fire sat Powhatan, a young wife on each side of him, resplendent with scarlet-painted shoulders and necklaces of shells; around him his warriors and counselors and a packed mass of eager spectators.

Around the prisoner stood a ring of medicine men, hideous in horns and masks, grasping rattles made from the tails of rattlesnakes, drums or savage implements of divination. The drums were hushed. The rattles were still. The yelling and dancing of the incantations were finished and the prisoner's fate was decided.

With arms tied behind his back, he was led to a great flat stone in the center of the wigwam. His head was placed upon it. Beside him a warrior brandished a huge stone war-club. Giles and his Indian guide arrived just in time to see it. In the excitement the white boy was no more noticed than if he had been an Indian lad. Dazed with horror he stood, knowing well that there was nothing he could do, although he would gladly have laid down his life for his captain.

Then there was a little stir. From among the crowd of women a slender girlish figure darted forward. She dropped on her knees beside the stone. She took the white man's head in her arms. The great stone war-club dared not fall now, for it would have fallen on Pocahontas, the favorite daughter of the chief.

She knelt beside her father, and with pleadings whose tone the boy could understand though he did not know the words, she begged for Smith's life.

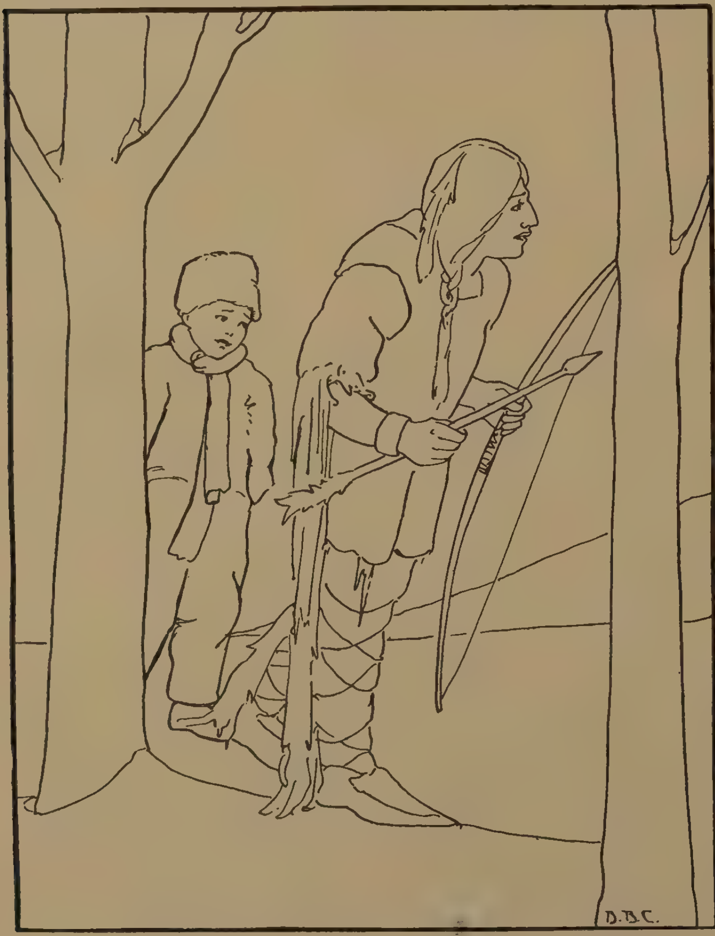
The fierce old chief scowled at her, but not for long. Who could resist Pocahontas, the sweetest of all the Indian maidens? Not her father, surely. He uttered a gruff command. Smith's bonds were loosed and he was given to understand that he was free.

Side by side with Giles he trudged back through the woods to Jamestown, followed by Indians bearing loads of the corn that should save the colonists. And if their happy talk touched again and again upon the little Indian maiden, Giles was all the more pleased. He thought of her many times in the weeks and months that followed. "I wish I could see her again," he thought. But he never dreamed how he would see her next.

There had come up in the night a terrible storm, such a storm as had never been imagined before they came to the new world. Giles lay on his bed of pine boughs and shivered. The men were asleep. He would not wake them, for he was ashamed of being afraid.

"Tap! Tap! Tap!"

Was that the beating of the branches on the roof? No, it was a knocking at the door. But it could not be made by human fingers. No one would be out in such a storm. With a confused idea that it might be the pet squirrel he had tamed coming to him for refuge from the storm, Giles rose and groped to the door. He opened it. There, drenched with rain, her wet garments clinging to her



"Giles set out through the snowy forest"

This design may be traced, transferred to water color paper and colored.

like the folds on a marble statue, her black braids dripping, stood Pocahontas.

"Come in! come in!" cried Giles, who could talk a little of the Indian language now.

"No," she said hurriedly. "I must go back. My father will be angry. But I want to tell you something. I have run in the night to tell you. The warriors of my people are planning to attack your town. I heard them plan it in my father's wigwam. Then I ran here to tell you when they thought I was asleep." Hurriedly she gave the details of the plot. Then she cried, "I must go back!" and darted away into the forest again through the storm.

Giles ran after her. It seemed dreadful to him for a girl to be out in that tempest alone. But the Indian girl was swifter than the white boy. Like a spirit she darted before him until she slipped from his sight. Her warning was given. She had done the best that she could for her white friends, and now she could only go home.

When Powhatan's warriors came to attack Jamestown they found it prepared for defense, and their attack failed. They did not know who had told of their plan. No one suspected the little Indian girl, who was seen safely sleeping on her couch of skins with the last ray of light, and sleeping again, wrapped from head to foot till nothing but eyes and nose were visible, in the morning. But the colonists of Jamestown knew, and never ceased to be grateful. The more Giles thought of it, the more courageous seemed that wild run through the storm, that kindly warning.

"She's the bravest girl I ever saw in my life," he said.

"And the truest hearted," added Captain John Smith.

A Little Dutch Boy and Girl of Old New York

In 1609 Henry Hudson, a captain of the Dutch East India Trading Company, found and explored the Hudson River as far as Troy, and carried back to Holland a load of otter and beaver skins, and glowing reports of the possibilities of the new country. In 1613 the settlement of New Amsterdam was made, on Manhattan island, at the mouth of the Hudson River. This land was claimed by the British on account of the Charter of 1606 which James I had given to the Plymouth Company. In 1619 an English captain warned the settlers of New Amsterdam that they were trespassers, but they paid no attention. In 1626 the Dutch bought Manhattan Island from the Indians for about one hundred dollars' worth of cloth and trinkets. In 1653 New Amsterdam was incorporated as a city. Besides Dutch, the new city contained Englishmen, Jews, Belgians and other nationalities. In 1664 Charles II decided to enforce the claim of the English to New Amsterdam, based on the grant of his grandfather, James I, in 1606. He sent a fleet of four armed vessels under Captain Richard Nichols to take possession of New Netherlands in the name of his brother James, the Duke of York. The fleet appeared before New Amsterdam in August, 1664. The surrender was made without a shot being fired. The English flag was run up, and the country taken possession of. The Duke of York became Proprietor and Governor of the colony, and both colony and city soon were named New York, in his honor.

"Oh, the Dutch companee
Is the best companee
That ever came across from the old countree!"

Heinrich was shouting this refrain lustily in Dutch—he called it singing—when Anneke, his small neighbor, ran out to tell him some news.

"The English ships are coming down on us"

Anneke was the prettiest little girl in all the colony of New Amsterdam. At least Heinrich thought so; though, being a boy, he would not have said so for anything. Her eyes were as blue as violets and her cheeks were as pink as the wild rose petals. Even her tight little Dutch cap could not

LET US MAKE—

A map of Jamestown and the country explored by Captain John Smith and his men. Draw pictures on the map that will tell the story of their expeditions for food and gold.

A map which will tell in pictured form the travels of Giles.

Models of—the fort at Jamestown as one may see it today; Chief Powhatan's summer home and winter home; Indian canoe; bow and arrow; basket; stone war club; necklaces of shells; drums, etc.

A scene on the sandtable, the floor, or the schoolground, depicting the solemn council meetings held by Chief Powhatan over the fate of Captain John Smith.

A copy of Pocohontas' dress as it is described in paragraph seven on page 398. Dress a doll as was Bright-Stream-between-Two-Hills.

A story of what Giles and Pocahontas said to each other, the night she gave her warning to her white friends.

A story wherein Pocahontas tells her version of the Jamestown colony and its people.

altogether conceal how pretty her flaxen hair was, for the unruly little curls stole out from it and surrounded her chubby face like a shining halo.

She did not know that it was pretty. She was told that it was very untidy, and she was always trying to make it lie back sleek and smooth like her cousin Frederica's. She looked a good deal like a little scarlet tulip as she stood there in her full red skirt held out by a great number of petticoats and her slim little green waist, only no tulip could be half so sweet.

Like a tulip swaying in the wind, she rocked to and fro in excitement. Even her voice trembled as she quavered forth breathlessly the greatest news that had ever come to the colony.

"Oh, Heinrich, the English ships are coming down on us! They have ever so many cannon and they will batter our houses all to pieces!"

"Why, that can't be so!" cried Heinrich in astonishment. "You are only a girl, Anneke. You couldn't have understood. Our governor had particular word that the English fleet was sailing here only to settle certain matters in their own colonies. They will not fire their cannon at us."

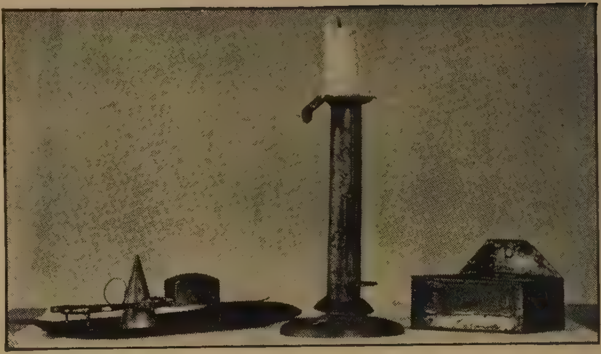
"Oh yes, they will," answered Anneke. She looked half frightened and half pleased at the excitement. "Governor Stuyvesant has had new word. As soon as he received it he issued orders that every man in New Amsterdam should go to work with the soldiers fortifying the city."

"Has he? Then I'm going." Heinrich did not stop for another word of explanation. He was off like a shot though Anneke called after him, "Don't you go. You're not a man. You're only a boy!"

Wooden Churn

"I'm big enough to handle a spade," he called back to her. Straight to the water's edge he sped where already men were beginning the digging. But he did not go because he was so anxious to help in the fortifying of the city, he went to be in the excitement of it. The grown men did not seem so very anxious to work either. There was as much talking as plying of spades and both were far from complimentary to the Dutch governor, Peter Stuyvesant.

"The English have more liberties than we," they grumbled. "And when we asked our governor as respectfully as was possible, to give us some such liberties, he flew into a passion. He refused everything we asked for and dismissed our delegates as if they had demanded something wrong. He didn't owe his authority to the people, he said, but it was given him by God and the Dutch West India Company. But we believe that God is on the side of free rights; and the Dutch West India Company is not worth fighting for since they refuse to give us what is for our best good. We'd rather surrender to the English who will."


Candlestick, Matches, Snuffers, Extinguisher, Tray

All along the line such grumblings were heard, and the spades moved but slowly.

He was a good man, this fiery governor Peter Stuyvesant, and a brave one, but he did not believe in popular liberty and he had not won his people's love. He really wanted their good, but he wanted it to be brought about just according to his own ideas. He had lost a leg fighting for his country and so wore a wooden one trimmed with silver, and was called Old Silver Leg.

Old Silver Leg stumped up and down where the men were at work, doing his best to rouse them to resist the English, but he did not succeed very well. Before long the English fleet was anchored in the bay, and the English commander sent a letter offering the inhabitants of New Amsterdam all the rights of Englishmen if they would surrender,

"There was as much talking as plying of spades" and declaring that if they did not, the English ships would reduce the city with their cannon.

Governor Stuyvesant was very angry. He tore the letter into pieces and ordered the people to arm themselves to resist. But the people did not want to fight. They filled the streets with hisses and groans for the governor.

"He tore the letter into pieces"

"I will never surrender the city. I will see it reduced to ruins first," he declared.

"It will be reduced to ruins indeed," the Dutch fathers declared ruefully. "The English have over a hundred cannon and ships full of soldiers. We have only twenty cannon and a hundred fifty soldiers. Our houses will be battered to pieces and we may all be killed. We do not want to fight the English. We want to surrender to them."

"I will never surrender," answered brave Old Silver Leg.

Then the Dutch mothers called all their children to them, and scrubbed and washed and combed them until their round faces fairly shone with cleanness. They would have done that no matter what was going to happen. Then they marched them, Heinrich and Anneke and Katrina and Neltje and Jakobus and all the rest to the governor's house. An awed and scared little group, they stood before him with the mothers just behind.

"See our children," cried the New Amsterdam mothers, with tears running down their cheeks. "They are in danger of being killed. We pray you for the sake of these little ones to surrender."

Little Anneke with her round blue eyes and frightened chubby face stood just in front of the governor. He reached down his big knotted hand and absently fingered one of the flaxen ringlets that had escaped from her cap as usual.

"I would rather be carried out dead," said the brave old soldier, who thought it the greatest disgrace in the world to haul down his country's flag.

Then the good dominie put his hand on the governor's shoulder. It was noteworthy that neither he nor the children were afraid of Old Silver Leg in spite of his fiery rages. Dominie Megapolensis set forth that New Amsterdam was entirely "encompassed and hemmed in by enemies," that they had not enough soldiers to make it possible to repel an attack and that the whole city had united in signing a petition for surrender.

"I would rather be carried to my grave," said the governor again. Then he looked down at Anneke and the other children.

"Little Anneke with her frightened chubby face stood in front of the governor"

Master's Desk

"Better that I should suffer than they," he said. "I will surrender the city."

So at eight o'clock the next Monday morning Old Silver Leg stumped out of the fort at the head of his little band of soldiers and led them down to the wharf where they took ship for Holland, for a part of the terms of surrender was that the Dutch soldiers should be carried back to their own country. Heinrich and Anneke and all the other children of the colony were there to see the embarking.

"Hurrah!" cried Heinrich, swinging his cap. But when he saw the old governor's face the cheer died on his lips.

"Anneke," he whispered in awed tones, "Old Silver Leg's eyes are all red. He has been crying. I'll wager he hates this the worst of anything he ever did in his life."

"I hate it too," whispered Anneke back. "I almost wish we had not asked him to surrender." She turned her eyes away from the marching soldiers and they lighted on the flag flying over the fort, that new English flag with the cross of St. George where their own dear Dutch banner had always flown and suddenly tears came to her eyes too.

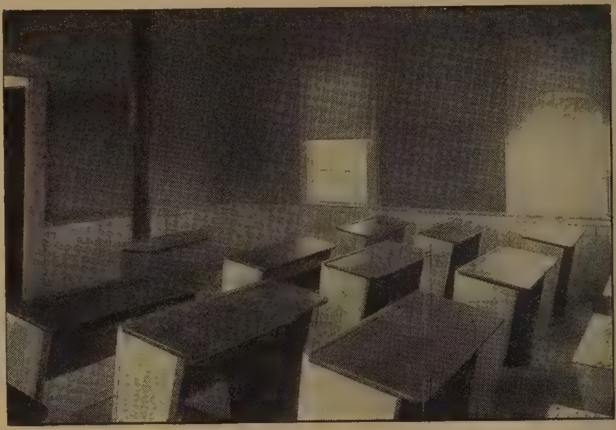
"We're English," she cried with a little catch in her voice. "Just think, Heinrich, we're not Dutch any more. We're English."

"The English have some fine new subjects," said a handsome young British officer, gallantly touching his cap as he caught the glance of a pretty Dutch maiden. "A thriftier, healthier, cleaner looking set of people I never saw."

Candle Molds

After all, it made very little difference in the daily lives of the boys and girls or their fathers and mothers whether the colony belonged to Holland or to England. They still got up at the sound of the watchman's rattle, and the good housewives scrubbed and scoured and cooked and baked until their houses were, perhaps, the cleanest, and their tables the most amply spread of any in America.

Little Anneke and Heinrich and the rest of the children, wondrously washed and shining, trotted off to school at eight o'clock every morning, including Saturdays. They had lessons in reading and writing and ciphering and the catechism. The schoolhouse was built of logs, and there was no temptation to the pupils to gaze out of the windows when they should be studying, for the windows were made of oiled paper. The seats were hewn logs or boards, each with four pegs put in for legs. Heinrich was rather sorry that their floor was such a fine one, all laid with the split logs called puncheons. In the school where his cousin went the floor was only dirt which many feet ground into powder, and the pupils had lots of fun stirring up clouds of dust. To be sure they were whipped for doing it, but that was nothing. Children expected whippings in school as much as they did lessons.



Old Seats and Desks

Some of the colonial teachers were very harsh and cruel, but the Dutch settlers of New Amsterdam put especially into the contract with their schoolmaster that he should "demean himself patient and friendly toward the children."

That did not mean at all that he should never whip his pupils, but he did a great deal less whipping than most of the teachers of the day. One of his punishments was to have all the children shout out together "Lazy!" to a pupil who missed his lessons or was tardy. For swearing on the schoolground he put a yoke around the swearer's neck. Neither Heinrich nor Anneke had ever had the other pupils shout out "Lazy!" at them and of course they had never had to wear the yoke.

There was only one thing the new English governor did that made any difference to the children of what was once New Amsterdam, and that was when he ordered that the schools should be conducted in English.

"It is right and fair of course, since we belong now to England," said the parents a little sadly. But the children found it a hard rule to obey. They talked Dutch at home and in their play. The only time when they spoke English was in the schoolroom.

The master saw that they would never learn to speak it fluently that way so he made a rule that no Dutch should be spoken on the school grounds, but English only.

The rule was constantly broken. The boys and girls did not like it at all, and some of them did not try to obey. Whenever the master couldn't hear, they would talk Dutch defiantly. Others meant to obey but forgot.

Some teachers would have whipped them all, but Anneke's and Heinrich's schoolmaster was patient and kindly by nature as well as by contract. One day he brought into the schoolroom a round copper medal with a hole drilled in it and a string passed through.

"Would Anneke really get whipped?"

"This is to help you to remember to talk English," he said. "The first pupil who talks Dutch must wear it around his neck until he catches somebody else breaking the rule. But the one who has it on when school is out shall be whipped."

At first it seemed like a game to them and they rather enjoyed wearing it and passing it on. But when night came they found that it was not a joke. The one who wore the medal when school closed was feruled soundly. The master held that if he threatened a punishment and did not administer a good one he was failing in his duty. The number who wore the medal lessened, and before long Dutch was seldom heard on the schoolground.

Then there came a day when little Neltje, the smallest scholar in school, burst out crying bitterly. In an instant Anneke, who was a real little mother to the smaller children, was by her side.

"What is the matter, Neltje? What are you crying for?" she asked tenderly in the little one's mother tongue.

"What is the matter, Neltje?"

"She talked Dutch! Anneke talked Dutch!" shouted a mean little scamp who had suffered many times himself for this reason and was glad to see the good girl of the school get into trouble.

Anneke looked piteously at the master and he looked just as regretfully at her. But his word had been passed and there was nothing to do but to hang the unlucky bit of copper around her neck. Not a soul forgot himself all the rest of the afternoon and not a syllable of Dutch was spoken. A good many were wondering if the master would really punish Anneke, the best little girl in school, who had never broken a rule intentionally. An unusual silence came over the room as the hands of the master's big silver watch drew near to four o'clock. Would Anneke really get whipped, little Anneke who had never had a punishment with the rod in all her good little life?

In truth, the master was as unwilling to give the punishment as any one could be to receive it. He fidgeted about in the chair of office, which was made of a section of log with a board nailed on it for a back, and dreaded to have the moment come as much as did the little girl.

It was two minutes of four when Heinrich raised his hand. He had been doing some thinking and made a resolve.

"Please, master, is it time to let out school?" he said, in the plainest and clearest Dutch. They were the first words that came into his head. It did not matter what he said if only Anneke could be saved from being whipped.

"But Anneke ran up to the old ex-governor"

Old New York

A design to be transferred and colored.

"Yes," snapped the master; and from the tone of his voice you would never have known how relieved he was. He sternly bade the reluctant Anneke give the medal to Heinrich, and as soon as school was out he proceeded to ferule the lad according to his word. But, though he contrived to make the blows sound very terrible, they did not hurt much. Some way Heinrich knew that the master really approved of what he had done. And it was with the utmost friendliness that the two bade each other good-night.

"I suppose you will go to the wharf tonight to see the ship come in from Holland. You had better hasten," said the master.

Most of the settlement was there, for it was still a great event when a ship came from the mother country. Anneke and Heinrich pressed to the front. The first passenger to come down the gangplank was a stout old gentleman with a wooden leg trimmed with silver.

"Mynheer Stuyvesant!" gasped Heinrich, "have you come back?"

LET US TALK ABOUT—

1. The location of New Amsterdam and the Dutch homes in that colonial village.
2. The differences between the New Amsterdam houses and those in Plymouth.
3. Why the English wanted Amsterdam.
4. Why the English could take it away so readily from the Dutch colonists.
5. Why the Dutch were grumbling about Peter Stuyvesant.
6. The way in which the Dutch mothers made the surrender of their village to the English.
7. The school which Little Anneke and Heinrich attended.
8. The reason for forbidding the Dutch children to speak their own language.
9. Your opinion of the boy "who told on" Anneke.
10. Why Heinrich wished Anneke to be saved from a whipping.
11. Why Heinrich was not punished severely.
12. Your opinion of the schoolmaster.
13. Your feelings about Peter Stuyvesant.
14. Making this story into a play.

But Anneke ran up to the old ex-governor and, reaching up her rosy little Dutch face, bestowed upon him a hearty Dutch kiss.

"We are very glad to see you, Mynheer," she said. And the other children, taking example from her, crowded around him in the heartiest of welcomes. Some way—they hardly knew why—they felt as if it were a beloved grandfather come back to them. And Silver Leg felt so too, and tears that were tears of joy came into his eyes.

"I am glad to be back," he said. "I found that after all I could not be happy away from New—New—York."

He made a wry face at the new name but his eyes lit up with a wondrous smile as he gazed at the flat little earthen fort with its windmill and high flagstaff, the double-roof church with its square tower, and the rows of little houses hugging the fort so closely that it was little wonder that the citizens feared to have the English guns fired at it.

"I found that I loved the new world best," he said brokenly. "It called me back. I will settle on my own farm, the *Bouwerij*, and there will I end my days."

And so brave old ex-governor Silver Leg returned and settled down like any other Dutch farmer on the land granted him by the government, and so it is that perhaps the most famous of all the New York City streets is called after his estate, the Bowery.

Four Little Quakers of Old Pennsylvania

The religious sect commonly called Quakers had its origin in England about the middle of the 17th century, and was largely the result of the ministry of George Fox, who is called its founder. Fox began his public preaching in 1648, and his followers increased rapidly. They were known as "Children of Light," "Children of Truth," "The Friends of Truth," finally adopting the name "Religious Society of Friends." They were the object of almost continual persecutions in England. These persecutions were upon various pretexts, as the refusal to pay church tithes, to take legal oaths, to remove the hat in reverence or obeisance; for preaching in public places; as disturbers of public worship; as Sabbath breakers, for traveling to their meetings on that day. This persecution was continued in New England when the first Quakers came there in 1656. Colonies were founded in New Jersey, and in 1680 William Penn secured from Charles II a grant of what is now Pennsylvania. Penn was the son of an English Admiral, holding a fine position in high circles but who suffered estrangement from his family and many imprisonments on account of his conversion and adherence to the Quakers. In 1681 two shiploads of Friends came to the new colony. Penn followed the next year, and in less than three years the colony had a population of 7000. Penn was fair in all his dealings with the Indians, and as long as the influence of the Friends predominated there was no conflict with them.

WAITSTILL knew that something unusual had happened by the look of Abiel's face as he opened the door; but baby Deliverance was just shutting her eyes and it was no time to talk. Father and mother had gone to Monthly Meeting. She was housekeeper and she had much to do. If the baby missed her nap, there would be trouble in the little log cabin by the Delaware.

So she lifted her finger as a sign to Abiel that he must not speak, and went on jogging the wooden cradle with her foot. When baby Deliverance was quite asleep she could steal out to the woodpile and Abiel would be sure to tell her all about it. They were great chums, twelve-year-old Waitstill and fourteen-year-old Abiel. He was a brother to be proud of. Waitstill's heart glowed at the thought of how tall and strong and sensible he was—and how good. Why, he wouldn't do a thing he thought was wrong, no matter if the king and all the royal army tried to force him! Hadn't Squire Hodgkins smitten him sorely, fairly knocking him down in the road, because he refused to take off his hat to him? And Abiel had risen up, put his dusty hat on his head again, and explained quite calmly and respectfully that it was not from lack of honor to the squire that he did not remove his hat in his presence but because he belonged to the Society of Friends, and it was against their principles to uncover to any man. The bluff old squire was well acquainted with William Penn and his religious beliefs, and, moreover, admired grit wherever he saw it. He had actually laughed and clapped his hand on Abiel's shoulder, saying,

William Penn

"You're a brave lad, and if ever you get into trouble following that Quaker conscience of yours, I'll be a friend to you."

Little Isaac was sitting very still on the settle. That was strange, but the five-year-old knew as well as anyone how important it was to get the baby to sleep. He was as sharp as tacks, was little Isaac. He had climbed up and taken down the hornbook that hung on a peg on the wall. He had not yet been taught his letters, but he was poring over the crisscross rows as earnestly as if he could read every one of them, the *a b*, *ab*, *e b*, *eb*, *i b*, *ib*, and so on below them, and even the Lord's Prayer at the bottom.

It was a precious thing, that hornbook, but Waitstill felt sure that little Isaac would not hurt it. He was a mischief, but he knew too much to damage anything valuable.

As Waitstill rocked the cradle she worked on her sampler. She would have felt that she was lazy if she had not kept her hands busy as well as her feet. Her sampler was already adorned with the alphabet and numberless fancy stitches and designs, including a blue tree and a green horse with red legs. She was working now at the verse.

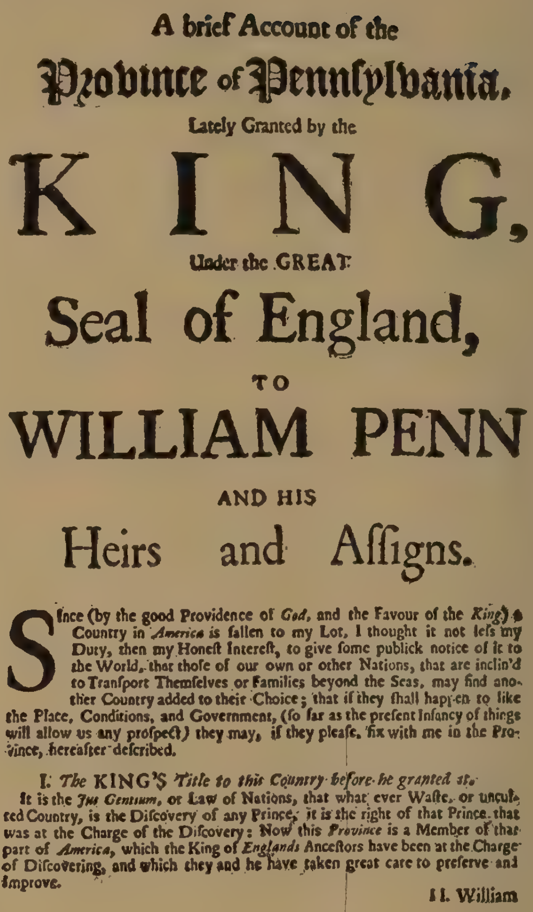
Waitstill Maxwell is my name
And this Work is mine
My Friends may have
When I am dead and laid in grave
This needlework of mine—

A Sampler

That was as far as she had gone with her colored crewels. As she took the last stitch in the "e" it came to her that Abiel had not gone out to the wood-chopping as she expected. He was tiptoeing around the shelves that held food and dishes. He went to the chest now and took out a coarse linen towel. In this he wrapped a loaf of rye bread and a great piece of the roasted venison that was on the pewter platter.

"Abiel, what is thee doing?" cried Waitstill in surprise. She was so surprised that she forgot all about the danger of waking Deliverance, but luckily the blue eyes were tight shut by this time, and the baby was a sound sleeper when she was fairly off.

"They are for a starving man"



A brief Account of the
Province of Pennſylvania,
Lately Granted by the
KING,
Under the GREAT
Seal of England,
TO
WILLIAM PENN
AND HIS
Heirs and Aſſigns.

Since (by the good Providence of *God*, and the Favour of the *King*) a Country in *America* is fallen to my Lot, I thought it not leſs my Duty, then my Honeſt Intereſt, to give ſome publick notice of it to the World, that thoſe of our own or other Nations, that are inclin'd to Tranſport Themſelves or Families beyond the Seas, may find another Country added to their Choice; that if they ſhall happen to like the Place, Conditions, and Government, (ſo far as the preſent Infancy of things will allow us any proſpect) they may, if they pleaſe, fix with me in the Province, hereafter deſcribed.

I. *The* KING'S *Title to this Country before he granted it.*

It is the *Jus Gentium*, or Law of Nations, that what ever Waſte, or unculted Country, is the Diſcovery of any Prince, it is the right of that Prince that was at the Charge of the Diſcovery: Now this *Province* is a Member of that part of *America*, which the King of *Englands* Anceſtors have been at the Charge of Diſcovering, and which they and he have taken great care to preſerve and Improve.

II. William

Title Page of Old Book

"Abiel, what is thee doing? Thee can't take those things. They are all we have to last over First Day."

"They are for a starving man, sis. We can get along with a little less for we are not starving. I am sure father and mother would say to take them."

"Abiel, what does thee mean? Who is starving? No one of our people, surely. Where has thee been to find a starving man?"

"In the Big Woods," answered Abiel shortly. Waitstill clasped her hands in sudden terror.

"Oh, Abiel, how could thee go there? Father says the Big Woods are not safe for a man to go in alone, and thee is but a boy. There are so many wolves and bears and all kinds of dangers. Abiel, what did thee go for?"

"It was a leading," answered Abiel. "I felt an impulse of the Inner Light that said, 'Go into the Big Woods and search.' And I obeyed, and found there an Indian who was hurt so that he cannot

"I made him a sort of shelter"

walk. He cannot get food for himself, and so I must take it to him. I must not stop to talk any more, sister. I must hasten to him."

"Is he terribly hurt, Abiel? Is he going to die?"

"No, not if he gets food. He has no hurts that will not heal. I made him a sort of shelter in the rocks, and he thinks some of his tribe will come looking for him soon, but he is very weak and faint and he must have food or he will die. I must not delay, Waitstill. I must go at once."

"Oh, I can't bear to have thee go again into those dreadful woods! Can't thee wait till father comes back so that he will go with thee?"

"Father will not start back, thee knows, until First Day is over. That would be too late."

"Oh, I don't believe father would let thee go! He has said often that it is not safe. Suppose a bear should get thee, or a panther should spring on thee! Don't go, Abiel! It is but a red man, a savage."

"The red men are our brothers," answered Abiel in stern reproof. Then, melted by her tears, he added: "I am sure father would say to go wherever I could help a brother, were it a red brother or a white one. It is always a duty to help. I must go."

He pulled himself gently away from the clinging hands. "Don't be troubled, sister. No real harm can come to one who is doing right."

Waitstill felt as if she had to let him go then, but her heart was heavy as she went back to her work.

"Much harm has come to those of our faith who were doing right—or who thought they were," thought the young Quaker maid sadly. Quakers had been whipped and imprisoned and mutilated, and even hung, for following what they believed as set to them as duty by that Inner Light. Waitstill admired the courage of these dauntless coreligionists, but even her devout father had said that some of them had shown zeal not according to knowledge. Wasn't that what Abiel was doing now? To go into the terrible forest, a boy alone!

Colonial Candle-stick and Lantern

Deliverance slept a long time. Long before she waked Waitstill had begun vibrating to and fro between the window and her household tasks, hoping, though she knew it was too early to be possible, to see Abiel coming back. The tiny log cabin in the clearing was oppressively still. Little Isaac, as he was apt to do when it ever happened that

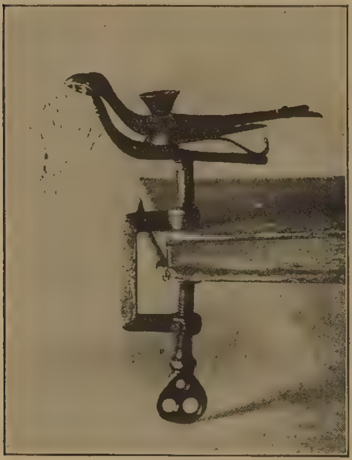
Bess Bruce Cleaveland.

Waitstill, Isaac and Baby Deliverance

Little readers will enjoy copying this design, or tracing it, and coloring it.

something made him really quiet for a few minutes, had slipped down on the settle and gone to sleep too. The lowering sun crept higher and higher on the wall till even its cheerful mark grew terrible to her, for it was red like a smear of blood. Every sound outside frightened her. Was that the hoot of an owl or the warcry of an Indian? An owl, surely. The Indians kept peace with Penn's followers, but fearful stories of their massacres had drifted down from the New England colonies. Why did not Abiel come back?

The terrifying red rays faded, and darkness still more terrifying took their place. Waitstill had done such evening work as there was to do and Abiel's nightly chores beside. Isaac and Deliverance had wakened and were playing. If Sister was with them they were satisfied. The girl played with them, told them stories and sang them songs till long past their usual bedtime that she might have them for company, her heart growing heavier all the time.



Sewing Bird

A device to hold the cloth when sewing by hand.

"The girl played with them"

Abiel had not come. Where was he? Deliverance had gone to sleep again and it was very late for colonial Pennsylvania when Isaac, who had someway managed to keep within three inches of her all the past hour, pulled at her sleeve.

"I saw a face at the window," he whispered. "It was an Indian's face—all dark, and he had feathers in his hair."

Waitstill caught her breath in terror. Then she remembered the treaty Penn had made with the Indians, to be kept "as long as the water should run in the river and the sun shine in the sky." She ought not to fear them.

She stepped to the barred door and threw open the upper half.

"Who is it?" she called, and her voice was steady though her heart was quaking.

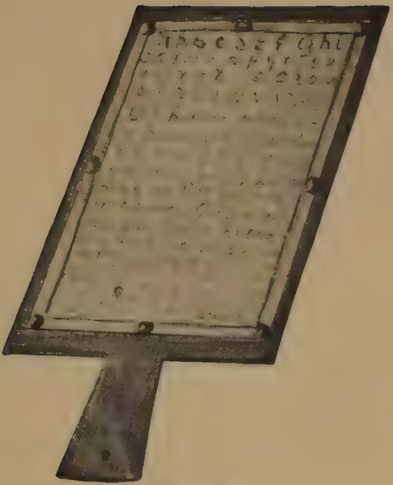
It proved, like everything else in her life, to be not half so bad as she had feared. In broken English the Indian explained that he belonged to the same tribe as the wounded man in the woods, that they had found him and Abiel who was ministering to him, and, partly because the boy was almost exhausted with his double journey, and partly because they wished to celebrate his kindness to their tribesman, they had taken him with them to their village along with the wounded man. This messenger had come to tell Waitstill and to bid her not be afraid, for he himself would stay and protect them.

"'Who is it?' she called"

It was like Abiel to think to send the Indian to tell her not to worry, and it was like him, too, never to think that she might be scared by an Indian messenger. Truly all men were brothers to Abiel. He was a true follower of William Penn.

He came back blithe as a lark with all sorts of stories of what he had seen in the Indian village, where he had been feasted and had had a fine time. His father and mother looked grave when they heard of his expedition but they did not reprove him. It was the duty of every Quaker to follow the Inner Light wherever it led him.

The days went by and summer came. Baby Deliverance trotted about on toddling feet. Little Isaac had grown, too, and he was certainly the most active child the Quaker household had ever seen. All day long he climbed and jumped. Not a tree was so tall but he might appear like a bird swaying in its topmost branches. There was no school where he could go, but his mother gave him



Hornbook

lessons and he learned with astonishing quickness. Already he knew every letter, syllable and word on the hornbook and could read the rhymes in the primer from—

> "In Adam's fall
> We sinned all,"

to—

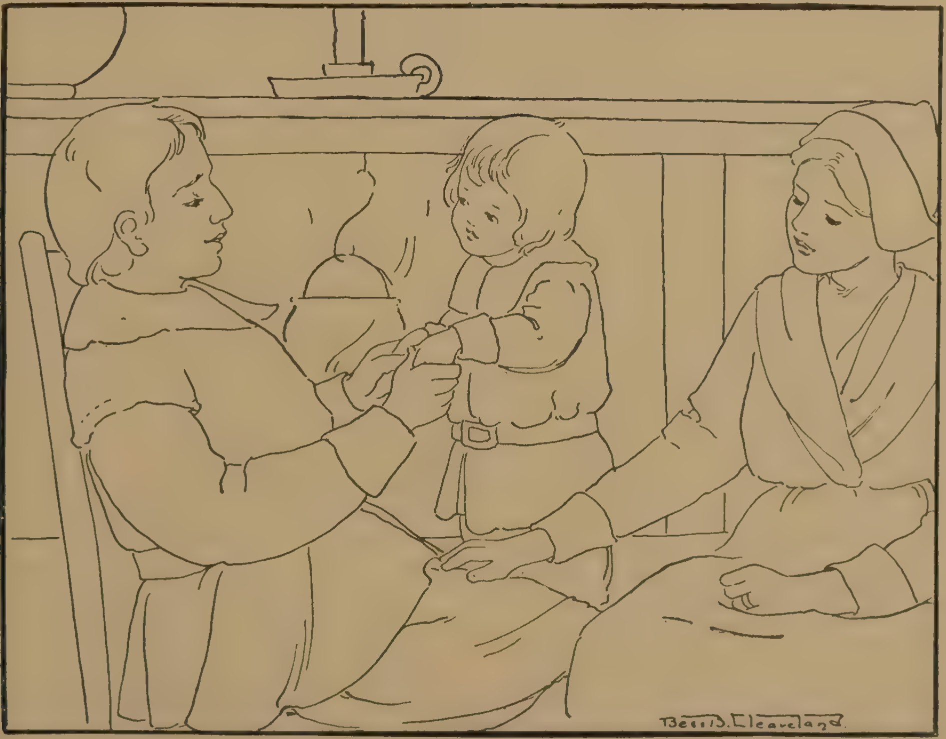
> "Zac-che-us, he,
> Did climb the tree,
> Our Lord to see."

He had many thoughts, too, in that little round head of his, and nothing that his elders said escaped his notice. He listened more than anybody dreamed to everything that was said about that Inner Light. His father and the other Quakers maintained that there was a voice of God in the soul to direct every man. They believed it was a duty to do just what that "Inner Light" led them to do. Some of the things the Quakers did were foolish and even shocking, though they were good men and women and meant to teach deep lessons by their strange actions.

Little Isaac had listened to Abiel's experiences with breathless interest and he wanted above all things to see the Big Woods and the Indian village for himself. Wishing to go so very much, he easily persuaded himself that he heard a voice in his soul directing him to go. Who knew but there might be another wounded Indian whom he might save?

With two slices of rye bread that he had managed to secrete in his pocket for provision, he started away. His sturdy five-year-old legs carried him far away before he was missed. His bare feet left no trace on the dry ground. On and on he went until he did indeed reach the very heart of the dangerous Big Woods and was as thoroughly lost as any youngster ever was in the world.

He did not mind while the daylight lasted. He ate his bread and lay down in the delicious cool shade and slept for hours as soundly as if he had been at home. When he woke, the long summer day was over and twilight falling awesomely in the woods. Then fear fell on his heart.



"Remember that the Word of God says, 'Children, obey your parents'"

Trace the picture, transfer to water color paper.

"Mother! Waitstill!" he cried, but mother and Waitstill were miles away. He ran frantically this way and that. He tried in vain to retrace his steps. All the while the dark was dropping down or rising up and enveloping the woods. Now was the time to think of bears and wolves. Little Isaac wished he had thought of them before he started. A tale of a visitor in the cabin of being set upon by a pack of wolves, came fearfully to his mind. This man had climbed a tree and sat all night above the hungry pack. He would climb a tree before the wolves came. Trees were easy for Isaac to climb.

"'Oh, is he dead?' cried Abiel"

He shinned up the nearest, and stretched himself out on a broad branch. Here he actually went to sleep with his arms clasping a bough. But he was not a tree-dweller and was certain to fall. If he had fallen from it in the night, wolves might have eaten him, but it was not till the early daylight that he yawned, stretched, rolled over sleepily and went crashing to the ground.

He was not hurt as much as might have been expected for he had fallen limp, but he was bruised from head to foot and one leg was broken.

There was trouble enough in the log cabin when he was missed. The members of the family hunted in every place they could think of, but in vain. All night long they were out crying, calling, searching. The news spread from one household to another and all the settlement joined in the search. Their worst fears were confirmed when they found his little cloth cap in the Big Woods. But no one could track him there.

As Abiel and his father stood, despairing, after hours of search, a half-naked figure, adorned with feathers and wampum, glided between the trees toward them, silent as a dream. It was the Indian whom Abiel had helped in the winter. The news had reached the Indian village.

"Papoose lost? I find him. He go this way."

He strode away with astonishing swiftness, following traces a white man's eye would never see. The searchers followed with mingled hope and despair until, just as the sun was setting once more, he led them to the pitiful little heap beneath the tree.

"Oh, is he dead?" cried Abiel, but the Indian looked up reassuringly.

"Not dead. Just hurt. Like me last winter. He be all right by and by."

He showed them how to make a litter of branches and they carried the little boy home to his mother. He was kissed and cried over and tended and petted during the days that followed as if he had not been a Quaker boy at all, and the Indian was showered with thanks and attempted rewards. But he would take neither presents nor money.

"We are brothers," he said, with a look at Abiel as eloquent as a white man's long speech. "We are brothers with all the followers of William Penn.

LET US CHOOSE THE RIGHT WORD OR WORDS—

1. Waitstill, Deliverance, Isaac, and Abiel were —cousins, brothers and sisters, friends.
2. Abiel was guided by—an Indian, animal tracks, an impulse of the Inner Light.
3. The founder of Pennsylvania was George Fox, King Charles II, William Penn.
4. Another name for Quakers was Pennsylvanians, Puritans, Friends.
5. Quaker children learned their alphabet from —a first-grade reader, the hornbook, the Bible.
6. Abiel helped—a starving Indian, a lame squirrel, a wounded deer.
7. The Indians took Abiel to—a fort, an Indian village, the river.
8. Abiel's father and mother upon their return home—scolded Abiel, looked grave, asked Abiel never again to go to an Indian village.
9. It was the duty of every Quaker—to be a follower of William Penn, to follow the Inner Light wherever it led him, to be a follower of the King of England.
10. Isaac was—a very quiet child, a most active child, a very naughty boy.
11. Isaac wishes to see—the river, the Big Woods and the Indian village, William Penn's house.
12. Isaac was—seven, three, five years old.
13. Isaac slept—under a big tree, on the broad branch of the tree, in the briar bushes.
14. Isaac was—carried away by the Indians, found by Abiel, found by the Indian who had been saved by Abiel.
15. The Indian who found Isaac—took presents, took money, said "We are brothers."

Brothers help each other." And empty-handed he strode away through the forest.

"Isaac," said his mother reproachfully when he had been at home long enough and was sufficiently convalescent for even an anxious mother to be rid of the terrible fear that he was dead or going to die, "Isaac, what did thee go into the Big Woods for? Didn't thee know it was naughty and dangerous? Why did thee do it?" Little Isaac didn't like to be scolded. His chin quivered pathetically.

"It was the Inner Light, mother," said the five-year-old Quaker. "It was a-leading. I heard a voice in my heart that said, 'Go into the Big Woods.'"

"He needs a whipping," said the neighbor who heard it, although she too was a Quaker. "Just think of the trouble he has made thee!"

But his father took the small hand and clasped it tightly in his own. It was such a little hand and he was such a little boy.

"My son," he said, and then his voice broke curiously as if he were half laughing and half crying, "my son, don't thee ever attempt to follow the Inner Light again until thee is quite grown up, without coming to me and telling me about it. Remember that the Word of God says, 'Children, obey your parents.'"

In the Days of Daniel Boone

In 1751, the Virginia Company gave a land company 800,000 acres west of the Alleghanies, for settlement. Dr. Thomas Walker was sent out to survey a road. He went from North Carolina through the Cumberland Gap, to the site of the present town of Barbourville, Ky. In 1769 Daniel Boone, a Scotch Irish pioneer, following the same route, founded Boonesboro, near Lexington, on the Kentucky River. Many settlers followed, the country filled up rapidly, and the colonies of Wautaga (Tennessee) and Transylvania (Kentucky) were founded.

JULY 17, 1776! The first memorable Fourth of July was only a little while past. The Liberty Bell had scarcely finished its joyous swinging in token that the Declaration of Independence had been signed. But three girls who sat on the bank of the Kentucky River, dipping their bare brown feet in its cooling waters, had never heard of the Declaration of Independence.

Nevertheless, they were true American girls, loyal and patriotic. In the year 1776 it took many months to bring news through the forests and over the mountains to the wilds of far Kentucky. The Kentucky settlers really did not know yet that war had been declared, or that the British were stirring up the Indians to attack them.

"I can guess what Betsey is thinking of," teased fourteen-year-old Jemima Boone. "She is thinking of Samuel Henderson, and wondering whether he will bring in a deer or a bear from the hunting."

"No, I'm not," answered Betsey, tossing her head. But she was, though, for the young hunter had looked very handsome when he started away with his gun over his shoulder; and his last look had been for her. Betsey was only sixteen, but in those days there were so few girls that they had to grow up fast. Shyly she snatched at the first thing she could think of to turn the conversation.

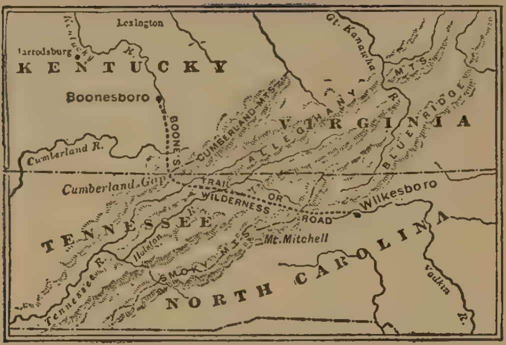
"I'm thinking about last Christmas," she said. "Oh, ho! How funny it seems now to think of last Christmas!"

The July sun beat down upon their heads. The comfortable log cabins of the stockade were only a little way out of sight. They had just eaten a dinner of corn pone and wild honey with venison, fresh green beans, cold turkey, baked squash, and raspberry pie. It seemed very strange to think back to the time when they had been half frozen and half starved, footsore and weary, and utterly miserable. Yet it was only six months before that Betsey and Fanny had arrived in Kentucky with a pioneer caravan, on the very eve of Christmas.

Daniel Boone

How good the little log cabin had looked with its roughly constructed fireplace that promised warmth, and the four walls that promised shelter. How good the parched corn and dried buffalo meat tasted, which was all their welcoming friends had to offer them.

The journey westward across the mountains through Cumberland Gap and through the untrodden forest beyond had been so hard that even in the hot July sunshine the girls shivered to remember it. On foot they had made it, and often their feet were torn and bleeding. Ahead of them and behind them the men walked with guns on their shoulders, always watching, always listen-



Boone's Wilderness Trail

ing; other caravans had been massacred by the Indians, every man, woman and child. They had not been able to go as fast as they had wanted to, and a bitter cold winter had overtaken them. They could go only two or three miles in a day and then camp in the snow. Oh, it was hard, very hard.

“Don't think about it,” said Jemima. “Let's go canoeing!”

The log dugout that the men used in crossing the stream was drawn up on the shore. The river was swift and not safe, but the pioneers, young and old, were reckless of danger.

“Come on, girls,” called Daniel Boone's daughter, pushing the canoe down toward the water. The two Calloway girls were quite ready to follow her lead. They all got into the canoe, sitting flat on the bottom, and Betsey began to paddle.

“Three girls sat on the bank of the Kentucky River”

The day was perfect. The trees bending over the water shaded them. Wild grape vines clambering over the trees made a marvelous tangle. They were joking and singing and chattering, as happy as girls could be. They fairly shook with laughter at Jemima's sallies.

“Don't be so funny, Jemima,” gasped Fanny at last. “I'm afraid the canoe will tip over.”

Then Jemima tried to sober down, for she knew the danger of that. But as all girls know, the harder you try to keep from laughing the harder it is to stop. Somehow, in the midst of their mirth the paddle slipped from her hand and floated down the current.

“There! See what you've done!” cried Betsey in consternation. “How are we going to get to shore?”

But Jemima refused to be alarmed.

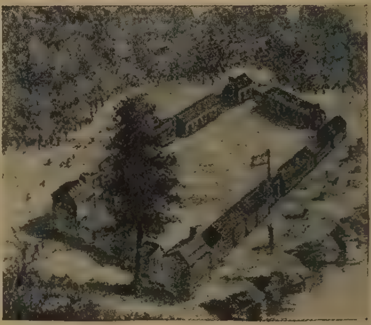
“We'll float over to the north side,” she declared calmly. “The current will take us right to the shore. And then we'll all shout together and the folks will hear us and come after us. Samuel Henderson will swim over, I know, if it is necessary.”

“A brown body was creeping toward the river”

Then the two Calloway girls calmed their fright and began to tease Jemima for her awkwardness in losing the paddle. They didn't often have a chance, for Jemima was as surehanded as surefooted.

“Look!” cried Betsey suddenly when they had floated almost over to the other side. “What is coming out from behind that bush?”

Sinuous and lithe, a brown body was creeping toward the river. It was an Indian in war paint, and from behind other bushes came four more.



The Stockade at Boonesboro

At first the girls were hardly frightened for they thought there was peace between the colonists and the Indians. But when the five Shawnees waded out into the water, dragged them from the canoe by force, and carried them ashore, they began to scream with all the strength of their healthy young pioneer lungs.

Their screams were soon choked off by their captors, but not before the sounds had reached the little settlement. But all the men had gone hunting and the only canoe was the one across the river. Before the men got home and could start after them, the three girls and their captors were far on their way to the Shawnee town on the Ohio.

"'Look!' she cried. 'Look! On that tree!'"

Betsey and Fanny looked piteously at Jemima, and Jemima looked at them. This was all they could do, for their mouths were gagged. They knew well enough that they had to go where their captors led them. Otherwise the tomahawks that were in the red men's belts would be red with blood. Yet somehow, as if by accident, Jemima contrived to stumble against a bush once in a while and break a branch. When her hands were freed, they furtively sought her skirt and tore it. When the Shawnees were not observing, she managed to drop a bit of the torn skirt on the ground.

Betsey and Fanny were quick to see. Somehow, their skirts got torn too, and little bits were left to mark the pathway; and, whenever possible, they broke a twig to show which way they had gone. But they had to do this very cautiously, for the Indians were sharp-eyed. Over rocks and ravines, through briars and thickets, those tireless brown savages led the three girls, without stopping for anything. If they stumbled, they were jerked up and on. If their bare feet bled, it was no matter. On and on, hour after hour, while the sun wheeled over to the west until his dying rays lit the under sides of the leaves as with fire. Then darkness put out the fires of the sunset and turned the woods black. Still the weary captives were dragged on. It seemed uncounted ages before the gags were removed and the girls were allowed to sit down on the ground, and a little bit of dried and pounded meat called pemmican was given them to eat.

The three girls slept in a huddled little heap at the foot of a tree, with a surly Indian keeping guard over them. No chance to steal away in the night or to say anything that should not be overheard. When Betsey awoke in the morning she clutched Jemima's arm convulsively.

"Look!" she cried. "Look! On that tree!" And Jemima looked, and for the first time broke into sobs.

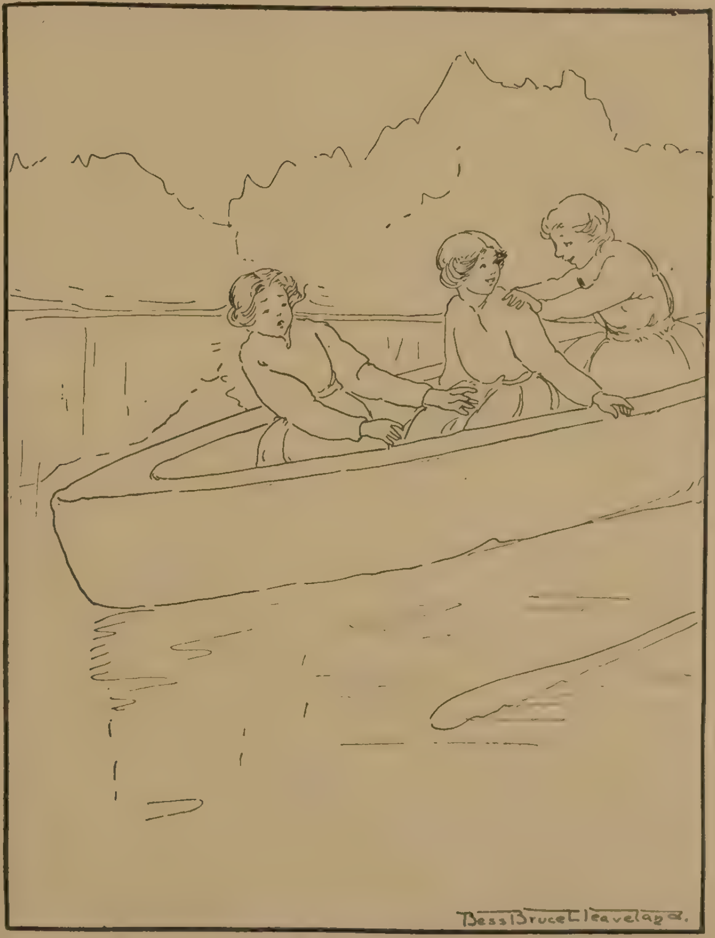
High up over their heads rose a giant of the forest. Rudely carved on its trunk was a legend that Jemima had many times seen, for her father had a fancy for cutting his name and hunting feats upon trees.

"D Boon cilled A Bar on this tree, year 1770."

For a few minutes they all cried together. Then Jemima choked back the sobs.

"Never mind," she said. "I know father will be sure to find us."

Back home, Daniel Boone, Junior, seven years



"Somehow, in the midst of their mirth, the paddle slipped out of her hand"

A tracing design for little readers.

"A half-faced cabin such as their fathers still built when hunting"

old, was playing bear. He was a very fierce bear indeed. He growled so fiercely and advanced so furiously that little Johnny, who was only three, began to cry, and the play had to stop until Becky, his sister, could comfort him.

The smaller settlers of Boonesboro were playing keep house, but the children today never think of such adventures as they went through in their housekeeping. They had gathered branches of trees and built a half-faced cabin such as some of them had lived in at first. It was exactly the kind their fathers still built when they went on one of their prolonged hunts where such a lodge was their only shelter for weeks. Dicky Calloway, in his enthusiasm, had even dragged out the bearskin that served for his bed-cover and hung it up on the open side to shut out the wind. It made no difference to these small pioneers that the wind was a July wind, warm and sweet-scented.

From this realistic house little hunters were issuing to mount prancing horses made of branches with long sweeping tails. Each one carried a stick gun, and they made wonderful shots at make-believe bear, deer, elk and buffalo. These were all impersonated by the one small boy, Daniel Boone, Junior; but he could growl terribly and imitate every wild animal of the forest.

Interior of a Boonesboro Cabin

The mothers laughed when they heard the clamor of the children at play. Betsey and Fanny Calloway and Jemima Boone, the three larger girls of the settlement, had gone down to the river.

The Children at Play

The mother of little Danny and Jemima sat in the doorway of her log cabin working over a piece of deerskin. She was going to make it into a hunting shirt for her husband. Cloth was impossible to buy and the settlers used skins, Indian fashion, a great deal.

"How much noise the children are making!" she said, smiling. "What can they be playing now? That doesn't sound like bear hunting unless—unless they have seen a real bear!"

"Help! Help! Father! Mother! Come! Oh! Oh! Oh!"

The end of the cry was strangely smothered. It seemed to come from the farther bank of the river. The children could not be there.

"Something has happened," thought the mother in sudden terror. She ran down to the river bank. But not a sound! Not a girlish figure in sight!

"Jemima! Betsey! Fanny!" she called. "Where are you?"

Not a voice answered. A squirrel chattered. A jay screamed. With sudden fear, she gazed anxiously up and down the bank. Where was the canoe? She could see the marks where it had been pushed into the water. Plainly the girls had gone out in it. Had it overturned?

"With terror in her heart, she sped down the bank"

With terror in her heart, she sped down the bank. Below the settlement she caught sight of the canoe floating on the north side of the river. It was right side up, but empty. Faint and far away came one more smothered, inarticulate scream, checked with ominous suddenness. On the farther bank the ground was trampled as by a struggle. A fearful thought made her heart almost stop beating.

Indians! There had been so many months with no trouble from the savages that the settlers had come to feel secure. But the red men often had done terrible things to the pioneers of Kentucky. Had they now seized and carried off the girls? Were those muffled cries their screams for help?

The wife of Daniel Boone wrung her hands, those strong, capable hands that could do so many things. They were helpless now. The canoe was gone, and she could not even get across the river. Sick with fear, she sped back to carry the dreadful tidings.

The stricken group of women and children listened. The men and the older boys had gone hunting, for hunting was as necessary to the subsistence of the little colony as cultivating the fields.

"It took an appallingly long time to gather them"

It took an appallingly long time to gather them together. Daniel Boone could not be found at all, for he was wont to hunt far away. With greatest haste, Colonel Calloway, the father of Betsey and Fanny, with a party of six, including, you may be sure, young Samuel Henderson, rode out on all the horses the settlement possessed, hop-

"Swift and unerring, a bullet sped to the savage's breast" ing to cut off the Indians at Lower Blue Lick as they crossed Licking River on their way to the Shawnee town.

"Ma, do you think they will find them?" queried young Danny, wide-eyed. "Will they bring Jemima and Betsey and Fanny back?"

"Oh, I don't know! I don't know," his mother answered chokingly. "If your father was here, he would get them."

"When will Pa come back, Ma?"

"Nobody can tell. When he goes hunting he may stay out any time."

But Daniel Boone was as keen as any Indian to discover from the smallest signs what was going on. Something told him, even in the deep woods, that the settlement was in trouble.

It was not long before little Danny, peeping through a porthole of the blockhouse, whither all the families of the settlement had fled, discerned the familiar figure in fringed deerskins approaching the tight-shut gate of the palisade of logs that surrounded the blockhouse. How they all rushed down to open it for him! They felt that he was a greater protection than the best fortifications. "Can you get Jemima back, Pa?" quavered little Danny, clinging to his arm. It was no time to be hindered by a child, but the strong man of the settlement did not shake him off.

"Yes," he said; and even Mistress Calloway felt a relief, though her own husband had started out on a rescuing expedition with half a dozen mounted men.

Daniel Boone went out on foot, with only three men, for it was not safe to spare more from the settlement. His quick eye saw the broken branches and the torn bits of cloth; and while the other party was chasing an imaginary trail, he was following a real one. Before captors and captives had gone many miles he was following in their wake with his little party, noiseless as silence itself.

"His quick eye saw the broken branches and the tiny torn bits of cloth"

Trace and transfer this drawing of Daniel Boone, and color with paints.

The savages were getting tired of their captives. For Indians, while they were fairly patient with the strong and well who fell into their hands, showed no kindness to the weak and sick. Fanny, the youngest of the girls, had sprained her ankle, and for the last five miles had been able only to hobble along painfully. At last she sank to the ground, unable to go a step farther.

"Ugh!" muttered the impatient savage who had been dragging her along. He snatched his tomahawk and flourished it over her prostrate head. A moment more and there would have been only two captives.

Bang! Swift and unerring, a bullet sped to the savage's breast, and the tomahawk dropped from a lifeless hand. Another bullet struck down Jemima's captor. The Indians could see no one and had no idea how large a force of whites was upon them. The three remaining Indians fled swiftly to the shelter of the deep woods. Though it would have been easy for them to find out how small the firing party was, and follow or ambush them, yet the whites never saw anything of those three Shawnee warriors.

The return home was a delightful trip for the girls, and if they had not been troubled about their mothers' anxiety, they would have been glad that Fanny's lameness made their progress slow. Daniel Boone knew a hundred ways to make such a trip comfortable. He made beds out of hemlock boughs for the girls. With his rifle he could bring down any kind of game, and he could dress it and cook it to perfection. He had even brought with him in that hunter's depository—the front of his deerskin shirt—the package of salt which the settlers found such a necessity to provide for in those days. Salt they had to make for themselves by boiling down the water of certain salt springs.

The journey was like a pleasure excursion, and Jemima and Fanny were a little sorry when it was ended. But Betsey was not sorry. Her girlish thoughts had kept turning to that other rescue party on horseback, the party that had failed to find them, with her father and young Samuel Henderson at its head. But the next thing in the annals of Kentucky was a wedding in August of Betsey Calloway and Samuel Henderson. In the quaint old chronicle of the time, it is written that the marriage was celebrated with great merriment. And the boys and girls, Danny and Dicky, Becky and Jemima, and Fanny and the rest, thought it was the most wonderful party of their lives.

A Little Boy of Early California

The territory now comprised in the states of California, Nevada, Colorado, New Mexico and Arizona was ceded to the United States by Mexico in 1848, after the Mexican War. Texas had previously been made a state, though its boundaries were extended by this war. California was seized in June 1846, without a struggle. It was a practically unsettled country, and for more than three hundred years had been a field of missionary work conducted by Spanish priests of the Jesuit and Franciscan orders. In 1846 there were missions at San Diego, Los Angeles, Santa Barbara, San Jose and San Francisco. The purpose of the mission was to teach the Indians Christianity, and to train them in the arts of civilized life. The chief occupations of the missions were farming, cattle raising and growing apples, pears, peaches, apricots, plums, oranges and pomegranates. The life of the missions was quiet and peaceful, the priests setting the example of industry by working in the fields side by side with their Indian converts.

OH GOOD, good! Tomorrow will be wash day!''

This was said in Spanish, not English, for the earliest little white Californians were Spanish. There were ever so many of them in the big low rancheria whose walls were three feet thick, made of mud and chopped grass pressed into great cakes and dried in the sun, called *adobe*. There were seven children, Teresita and Juanita, Luis and Francisco, Carlos and Dolores, and little Antonio, and every one of them was happy when wash day came.

For it didn't come every week. It was an event, a sort of rancher's picnic. Then Miguel hitched up a yoke of oxen to the clumsy creaking two-wheeled cart which was their only vehicle, and all the children were packed in beside the soiled clothes, or rode along in front or behind, on wild looking, half-broken *bronchos*, delighting in the way they shied and jumped and pranced.

"The clothes were carried to the river"

Those little early Californians had learned to ride a horse almost as soon as they could walk, and it was a vicious beast that could unseat them. The women servants went too, and some of the men servants, and they carried along a picnic dinner that had been prepared in the great smoky kitchen.

LET US RELIVE BOONESBOROUGH DAYS

Far away happenings become real experiences, names and facts lose their "lesson to be learned" aspect, and imaginative power removes the four walls of the classroom when "the play's the thing."

Serve a meal such as that described on page 413. Why will it be necessary to omit the venison? What can you substitute for the turkey? Why didn't the settlers use chickens?

Dramatize the wedding of Betsey Calloway and Samuel Henderson. This may be used for an assembly program which includes an invitation to others to enjoy the results of a study of Boonesborough.

Map out the route the Boones traveled from their old home to Boonesborough. Contrast that route with the one which would be found today.

Build a replica of the stockade at Boonesborough. Make the log buildings large enough to permit furnishing in true Boonesborough style.

Choose a certain character who lived in Boonesborough. Keep that role all through the study of the pioneer settlement. Enact your part as you lived it at the time of the capture of the three girls by the Indians. He who plays the part of Daniel Boone Jr. must be able to imitate every wild animal of the forest.

"He had put down an admiring small finger"

The washings of that day were not done in tubs at home. The clothes were carried to the river and soused and soaped and spread out on the rocks and beaten until they were as white as the snow on the tops of the mountains.

But there was one piece of linen that was not tossed with the rest into the two-wheeled cart. It was wrapped in a cloth and tied very carefully to the pommel of Teresita's saddle, and she hardly took her hand off from it all the way. It was a beautiful cover of drawn work which the little girl had made all herself. No servant's hand was allowed to touch it. It was too precious. With her own deft fingers she unrolled it and dipped and spread and beat it with the greatest care. Then she left it lying on a great rock to dry and joined her brothers and sisters in their fun.

They waded and splashed. They climbed trees and swung on grapevines. They gathered the sweet wild berries, and stained their hands and their mouths all purple with them. They ate when dinner came, as hungry as little pigs, and then went on with their merry-making again. Washing day was just a great picnic to them.

And the servants regarded it in much the same way. They laughed and dawdled and played jokes, and though old Manuela scolded because the work did not get on faster, they paid very little attention to her. They would have worked harder under the eye of the mistress, but she was not feeling well and had remained at home, giving the charge of affairs to Manuela and Miguel. But they did not get on very well together, and in the middle of the afternoon Miguel decided that he must return to the ranch to attend to some matters there, leaving his son Juan to drive the oxen home. Manuela only said, crossly, "Well, take that Antonio home with you. The boy acts today as if he were possessed. He's into mischief all the time."

Now, Antonio was Miguel's favorite, and ordinarily he would have been glad to take him. But today, because he was put out with Manuela, he

"Miguel hitched up a yoke of oxen to the clumsy, creaking, two-wheeled cart" did not want to do anything to please her. So he called none too loudly, "Antonio, Antonio, you are to come home with me."

No Antonio answered. "Tell Manuela I can't find him," Miguel said carelessly to Carlotta who was spreading wet clothes out to dry in the sun. But Carlotta did not half hear and straightway forgot all about it. Manuela thought the little boy had gone with Miguel and told the others so when they asked for him.

"Antonio was sleeping soundly"

Where was Antonio? To tell the truth he had been into new mischief and he thought it wise to keep out of sight and not answer when he was called. And yet he had not meant to do wrong. In a spasm of little-brotherly admiration he had bent over Teresita's beautiful work as it lay spread out on the great rock. He had put down an admiring small finger just to touch a drawn work butterfly with outspread wings in one corner. But alas, the finger was berry-stained and the cloth was wet, and a great purple stain showed just where he had touched it. Aghast he snatched it up to try to wash the spot out, but it caught on a sharp point and tore a great hole. It was then that little Antonio felt it the part of wisdom to go behind a large tree a considerable distance from the rest and remain there a long time.

A Cactus on the Mesas of Old California

The afternoon sunshine was very warm and pleasant at the foot of the tree. Little Antonio had been up since five o'clock to be on hand to take in every bit of the joys of washing day, and he had been ever since as active as it was possible for a small boy to be. With a little sigh he stretched himself out on the warm ground; and in five minutes he had forgotten the torn table cover and everything else.

The washing proceeded with a slowness most irritating to Manuela, and by the time they were ready to start for home they were in a great hurry to get through the woods before dark. The creaking wagon wheels made as much noise as a brass band and the whooping riders as much as a band of Indians, but Antonio did not hear a sound of their going. He was not even missed when they got home, for the mother was not about to round up her flock and it was assumed that he had come home in the afternoon with Miguel. Sometimes the little fellow slept in one bed and sometimes in another, and no one thought to look and so discover that he was missing from each.

"They stopped right there"

Meanwhile little Antonio, curled up in a little bunch at the foot of the big tree, was sleeping as soundly—though hardly as warmly—as if he had been in his mother's big bed.

Sleep was kind to the little fellow. The big dark which would have frightened him greatly if he had been awake passed by unnoticed. Bears prowled around him and a mountain lion leaped fairly over the motionless little figure. The forest was full of terrifying night noises of beast and bird, but he did not hear one of them. He did not waken until the rising sun touched the leaves above him.

"He told him how the good Catholic fathers first came to this Indian country"

He was hungry and cold, and his lonely little heart was filled with a great longing for his people. Oh, for a sight of his father or his mother or Teresita or Miguel, or even cross Manuela! But with the thought of them came also the memory of the mischief he had done the afternoon before.

He did not think how wild with anxiety they would be over missing him. He thought only of how he had been a naughty boy and how punishment was due to be meted out to naughty boys by their proper guardians. It is doubtful whether he could have found the way home if he had tried, but instead, he tried to keep away from it. He had made up his mind that, much as he wanted to see home, it was not a safe place to seek just then. A scrap of the older children's conversation at the merry noon meal floated up in the current of his memory.

''What would you do if you were lost in these woods?'' Teresita had asked, and Luis had answered,

''I'd follow the river. That would take me straight to the mission where the good fathers are.''

The river was close at hand. Antonio decided that he would follow it, and, by good fortune, he started the right way. His sturdy little legs were active and strong. By the time his anxious family had reached the spot where the washing had been done and were searching for him, he was far away and they could not find a trace of him.

Josè, the Indian shepherd boy, was watching a flock of the mission sheep on the edge of the *mesa*. He was stirring restlessly about and scanning the distance on all sides. The quiet life of a mission shepherd did not suit him very well. A short time before he had been a wild Indian roaming where he would. But now he had become a *neophyte* and been baptized and must do what the holy fathers thought it best for him to do.

Far along the bank of the river he saw a moving black speck. Was it a wolf or a coyote? Slowly it came nearer, and lonely Josè could have shouted with joy, for he saw that it was a boy.

But such a little boy, and walking so wearily! Indeed, poor little Antonio could hardly drag one foot after the other. The gay little scarlet jacket trimmed with silver braid and the small trousers of green velvet were spotted, stained and torn. His hands and face were so scratched and covered with berry stains and dirt that it was impossible to tell from their color whether he was an Indian or a white boy.

With genuine kindness Josè cared for and comforted him, and fed him with the larger part of his own lunch of *atole* or ground barley. But, faithful young neophyte that he was, he never thought of taking the little lost boy to the mission until his day's work was over. Instead, he told him stories to amuse him. He told him how the good Catholic fathers first came to this Indian country to establish a mission among them.

''They stopped right there,'' he said, pointing to where the mesa was crowned by the little cluster of mission buildings, the chapel lifting its tower and dome against the blue California sky. ''They stopped there and my people went out to see them, but had not yet made up their minds whether they would kill the white strangers or let them stay. Then the father-with-the-long-robe unstrapped a most curious box from the back of the mule they were leading, and we waited to see

“Jose drove his sheep back”

what he would take out of it. But he took nothing out of it. Instead, he took hold of a handle that stuck out from it and turned it round and round. And then the box began to sing—oh, most wonderful songs! It was like nothing else we had ever heard before.

“At first we were afraid and fell down on the ground in terror. But the father-with-the-long-robe told us to have no fear, that the sounds were holy music. It was praise to the Great Spirit that the wonderful box was singing. Then he gave us sweets, and told us he had come among us to teach us the will of the Great Spirit.

“We liked the sweets, and we wanted to hear the wonderful singing box some more, and so we told the white father that he and his company might stay if they would let us hear the wonderful box sing every day. And we helped them build their houses, and they baptized us with holy water and now we are their children and must do what they say.”

“Can I hear the wonderful box sing?” asked Antonio eagerly.

“Yes, tomorrow is a *fiesta* and they will make it sing for us. You shall go with me to the chapel and hear it,” promised Josè.

When the chapel dome showed black against the golden sunset sky Josè drove his sheep back to the mission corral, leading little Antonio by the hand. If he had understood how anxious white fathers and mothers are to know the whereabouts of their little boys he would have taken him at once to the padre, who would have sent word to the ranch. But the Indian boys were used to roaming far and wide, and their parents never worried. It did not occur to Josè to do anything with the small rancher except keep him with him all night. Antonio enjoyed it. He had never before eaten anything that tasted so good as Josè's supper of *frijoles* or beans, except, indeed, his dinner of atole, and he nestled down beside his new friend, on his bed of pulled grass in the Indian boy's quarters, as happy as a king.

It seemed only a very little while before Josè shook him to waken him, and it was really before daybreak.

“Come,” said Josè. “We must go to mass and after that we shall be given our breakfast.”

Antonio, half asleep, stumbled more than once as they crossed the square court surrounded on three sides with the mission buildings, but Josè pulled him steadily forward.

“Come on,” he said. “If we don't hurry we shall be late and the padre is angry with late ones.”

He was, indeed. Two or three sleepy members of his flock tried to conceal their tardiness from him by slipping in at a little side door after the mass had begun, but he stopped and glared at them in the midst of the solemn service.

“I shall have that door walled up,” he muttered.

“He managed to hang it up”

After mass they all trooped to the door of the great mission kitchen, where each one was given a bowl of atole for breakfast.

“Now,” said Josè when it was well over, “you shall hear the wonderful music box.”

For, in honor of the *fiesta* the good fathers had promised to play every tune in it to the assembled people.

Every Indian on the premises gathered in the chapel, and their faces were very eager as they listened for the wonderful music to begin.

“This,” said the holy father gravely as he began to turn the crank, “is ‘Adeste Fideles.’ ”

The joyous old Christmas hymn floated up to the rafters, which were painted in diamond-

A Spanish Mission of Early California

A California Mission

Transfer this design and color the trees green and the buildings a soft yellow.

shaped patterns of red, yellow, white and blue. The father who manipulated this quaint tin pipe hand-organ held in his left hand a sheet of parchment bearing the names of all the selections it played.

"This," he said as he began a second, "is 'Gloria in Excelsis.'" But at the third selection the padre announced simply, "This is Number Three."

Josè nudged Antonio. "Now you will hear the best thing the wonderful music box can play," he whispered. "It is what we all love the best. If we had our wish, we would hear just this all the time and no other."

Scarcely was the tune struck up before heads began to nod and bodies to sway in time to its rhythm. This was no hymn tune. It was a waltz, the maddest and merriest kind of a waltz.

All unconscious of where he was or what he was doing, little Antonio tripped into the vacant space before the organ and began to dance about it, clapping his hands and kicking up nimble heels like a veritable elfin sprite. He was so little, so utterly void of disrespectful intent, that even the stern padre looked at him with a smile and motioned with his hand to restrain a shocked attendant who advanced to draw him back.

When the waltz was finished, Antonio returned to his place beside Josè, almost unconscious that he had left it; then Number Four, which was a Te Deum, began. All the other selections were religious music. The Indians loved them all, but they loved the lively Number Three far better, the number which the fathers would have cut out if they could have done so.

When the Indians were dismissed, the padre called Antonio to him and questioned him about his home.

"You should have been brought to me last evening. I will send a messenger to your father at once," he said.

LET US GO HUNTING—

1. To find differences between the early white Californians and the New England colonists as to (a) language, (b) homes, (c) work.

2. To find the story of the Spanish Mission Fathers.

3. To find pictures to illustrate a booklet on Early Californian Days.

4. To find words which pertain to Early Californian Days. Put these words into an illustrated dictionary. In this dictionary, one should include such words as adobe, padre, frijoles, neophyte, fiesta, mesa, etc.

5. To find the history of music boxes.

6. To discover the differences and similarities between early California and New England.

7. To find other stories about Early Californian Days.

But it was not necessary. Already some one was pounding on the mission door to inquire in agonizing anxiety whether any news had come to the mission of a little lost boy. The padre was called, and Antonio was left for the minute alone. Just then a sportive breeze picked up the parchment bearing the names of the selections played by the organ—the only list in the mission—and blew it down to the little boy's feet.

Pioneers Bound for the West Descending the Ohio River

He lifted it reverently. He was not tall enough to put it back on top of the organ; besides, the wind might blow it down from there again. He knew it was precious, and he looked carefully about to find a place where it would be safe. It had been hung up before. There was a peg in the little side door just high enough for him to reach. Standing on tiptoe, he managed to hang it up in this place—and then he forgot it forever for he heard his father's voice.

"Oh, father, father," he cried, darting forward and flinging himself upon the *Senor* like a small whirlwind, "take me home!"

The family of Antonio was perhaps unduly grateful to the fathers at the mission for the safety of their small son, seeing how little they had had to do with it. They bestowed many gifts upon the mission, and Teresita was so thankful that she presented the very wonderful drawn work cover that Antonio had torn, but now so exquisitely mended that no one would dream there had ever been a rent in it. It was given to the mission chapel for an altar-cloth.

The losing of the parchment list of the organ selections was not connected with Antonio, though search was made high and low for it. The little door was walled up as the padre had threatened, and the workmen never noticed the list hanging on it. The list seemed to be lost forever, and it was lost for a hundred years. Then, when the mission buildings were in ruins and the mission Indians had vanished like snow in the springtime, somebody, with the laudable purpose of preserving the ancient landmarks, undertook the restoring of the old chapel. The hidden door was brought to light, and hanging on it was the strip of yellowed parchment with the lost names. So we of today know what Antonio and José never found out, that the mysterious, alluring Number Three which the vanished Indians loved so well was "The Sirens' Waltz."

A Boy's Part in the Journey to Oregon

Oregon was the name given to the country north of 40°, north latitude, and west of the Rocky Mountains, which now includes the states of Oregon, Washington and Idaho. It was discovered in 1792 by Captain Robert Gray, of Boston, who entered the mouth of the Columbia River in a trading vessel. In 1803 Jefferson secured from Congress an appropriation, with which he sent Lewis and Clarke to explore Oregon. They left St. Louis in May, 1804, followed the Missouri River to its source, crossed the mountains, and followed the Columbia River to the Pacific. In 1818 Oregon was occupied jointly by England and America. In 1840 the United States, unaware of its value, was on the point of abandoning Oregon. Marcus Whitman, a medical missionary, in the winter of 1842-3, made the stupendous journey from Oregon to Boston and Washington on foot, to protest against the proposed action. His protest was successful, and Whitman returned to Oregon. He and his family were massacred by the Indians in 1847.

"YOU can't take a wagon into Oregon."

"Why not?"

"You could never get a wagon over the mountains."

"But we came over South Pass."

"Oh, South Pass is nothing compared to the trail over these mountains into Oregon! I tell you, wagon never has gone over these mountains, and wagon never can. Why, at Fort Hall I can show you a corral full of wagons and everything that could be put into them, left behind because it was no use to try to take them any farther. Hundreds of dollars' worth of tools and clothing and furniture! You may be sure settlers would

"Painfully toiling along in the white-covered train of 'prairie schooners'"

not abandon such things if there was any way to take them on."

"But—but—can't the folks get to Oregon?"

"Oh, yes, they get there—if they are lucky. But they tie their bedding and pots and provisions on the backs of their mules and oxen, and drive them over the mountains. It's the hardest six hundred miles of travel any of them ever attempted."

"Oh, dear!" Mary looked at John for comfort, and John—boy as he was—had actually turned white under all the dust and tan that covered his face. Six months before they had left home and friends, and had been painfully toiling along in the white-covered train of "prairie schooners" ever since. They had crossed the backbone of the Rockies at South Pass and had confidently believed that the worst was over. And now, when they were in very sight of the last chain of mountains that separated them from their journey's end, to receive this discouragement!

It was an English rider who gave them the disastrous tidings. He had come all the way from Fort Hall on purpose to meet them and tell them this.

"Maybe," whispered Mary, with some idea of driving that dreadful white anxiousness from her brother's face, "maybe the English don't know."

But the speaker heard her and glared at her fiercely.

"Don't know, girl? Who could know better than a man who has been stationed at Fort Hall for ten years! I tell you I have seen every train of immigrants that has gone into Oregon. They all left their wagons at the fort, every one."

The look and the words were more than the worn-out little girl could bear. Tears came to her eyes. But she must not cry before folks. She looked wildly around the circle of wagons, which were drawn up every night as a barricade against wild beasts and Indians. To the very farthest one she slipped away. Dropping down behind it she covered her face and cried as bitterly as a dismayed little girl can. But she took great care to make no noise about it. To know that she was crying would dishearten the rest. No one of all that brave company ever cried in sight of anybody else.

She thought she was completely hidden, but somebody missed her and came in search of her. Very softly a pair of scratched, brown feet—bare because they had worn their shoes until they had dropped off and no more were to be obtained—stole up beside her. A brotherly hand awkwardly patted her hair. A brotherly voice said huskily:

"There, there, there! Don't cry!"

"Oh, but, John, what shall we do? Mother can never walk over the mountains. She can't ride a mule with the new baby. We can't go on at all without the wagon."

"We can't stay behind. We'd starve, or freeze to death. I'll tell you, Mary, I'll ask Doctor Whitman if it's so. He knows everything about the trails. He wouldn't have tried to take us into Oregon if he hadn't known we'd get there.

"Doctor Whitman has ridden ahead to find the best place for us to ford the river tomorrow. I heard that Fort Hall fellow ask where he was as soon as he came into camp. I thought he wanted to see him, but I believe he was really glad that he was gone; I don't know why.

"We mustn't stay away any longer from mother, Mary. She is sure to want us. Here, I'll wipe your eyes."

Handkerchiefs were long a thing of the past with them, but he wiped the tears away very gently with the hem of Mary's apron. There never was a better brother than John.

"The speaker glared at her"

"Don't you worry any more, Mary," he whispered. 'I'll stay awake until Doctor Whitman comes back to camp, and then I'll go right away and ask him whether it is true that a wagon can't go over these mountains."

It was eleven o'clock when the good missionary doctor, Marcus Whitman, who held the unpaid office of leader, guide, physician, comforter, friend and chief adviser to all the long caravan, got back into camp. He had taken a long, hard trip

The Camp on the Prairie

while the others rested, to make sure of a safe route for them the next day. But, late as it was and tired as they were, a score of men—heads of families—were waiting to tell the doctor of the dreadful new trouble. The good doctor heard the story with unruffled serenity.

"It isn't true," he said. "The English fur company has simply given orders to discourage every American settler who starts into Oregon. They do not want to have it settled by Americans. That is all."

"But he said we couldn't take our wagons across the mountains! They said a wagon couldn't be taken across."

"That is not true. I myself took a wagon across the mountains into Oregon six years ago."

Wonderfully comforted and cheered, John betook himself back to Mary and the wagon. It seemed only a minute to him before the sentinels fired the four o'clock signals for the camp to get up.

"Oh, I can't wake up yet," he murmured sleepily. "I've just gone to bed."

"Oh, John"— Mary was almost crying at the necessity of rousing him—"you know you must wake up or else we'll be late getting ready to start, and lose our place in the line of wagons. To go to the end would be dreadful."

It was their father's assigned duty this morning to ride out and help in the rounding-up of the loose cattle and horses that were driven after the caravan, which gave the "cow column" its name. The cattle were allowed to graze at night and sometimes they strayed away to a considerable distance. So John made the camp fire and attended to the rest of the morning chores while Mary helped her mother. Mother wasn't at all strong yet; the baby was crying and fretful, needing much care, and so it fell to the lot of eleven-year-old Mary to get the breakfast by herself.

It wasn't much breakfast, just pancakes and fried salt pork, but the plains' pancakes required skill to bake them. They were not such little pancakes as we have on our breakfast tables. Each one completely filled the bottom of the big skillet in which it was cooked. And they were not turned with a knife or pancake-turner. As soon as one side of the cake was done, it was the cook's part to seize the long-handled skillet and give it a dextrous flip that loosened the pancake and tossed it up in the air. It was caught as it turned over coming down, and then the other side was browned.

Mother was very expert at tossing pancakes. So were father and many of the plainsmen who were used to cooking for themselves. But Mary wasn't so skilful, and more than one of the pancakes that she had tossed dropped raw side down in the sand.

"Don't eat them," said Mary. "Let me stir up some more batter."

"No," answered John bravely. "A little sand won't hurt me. I need it."

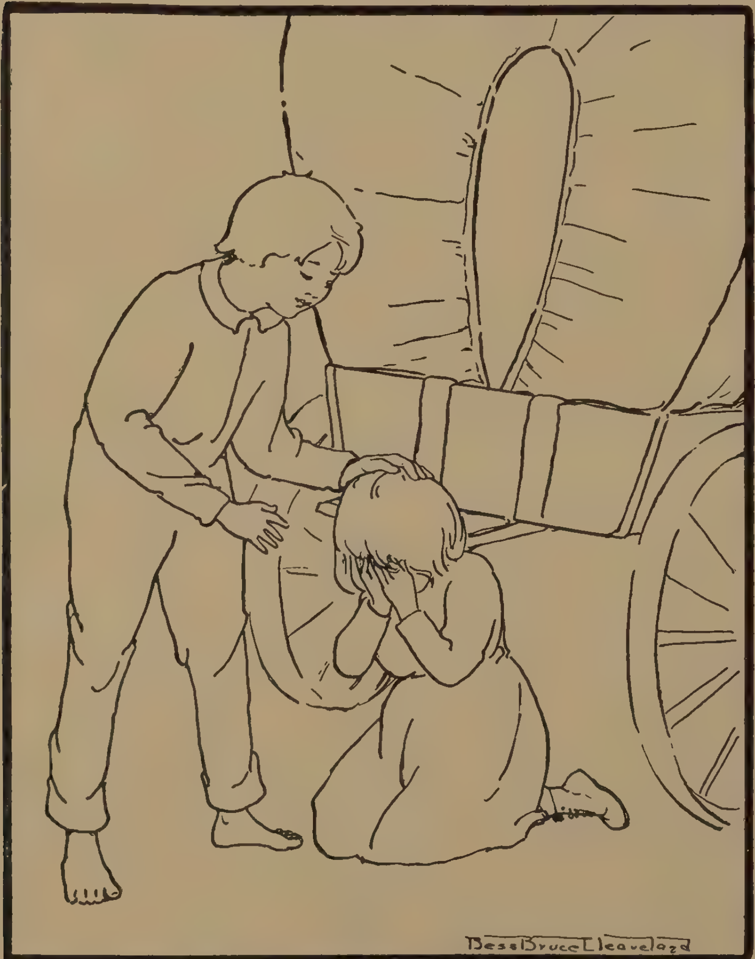
He knew how precious the flour was, and how small the store; so he picked up each dropped pancake, scraped it off as well as he could and put it back into the skillet to finish cooking.

"I wonder why father doesn't come back?" he said, as their neighbor's oxen were led up to be yoked to the wagon. "It is getting near time to start. We may lose our place in the line after all."

He hastily crammed the last of his gritty pancake into his mouth and ran to bring up their own oxen and hitch them to the wagon, something which father usually did every morning. Why didn't father come? At seven o'clock the signal to march would be given, and the wagons, divided into groups of four, would roll out, creaking and groaning, to start on the weary journeying again. The four that had gone first the day before would now be last in the procession—the place both of greatest danger and inconvenience—unless there was some wagon that was not ready to move out when the signal sounded; for such a belated wagon had to come last of all.

“John,” said his mother anxiously, when the signal for the seven o'clock start sounded and still the father had not appeared, “I believe something has happened to your father. No, John, don't start the oxen! I'm going to stay right here until he comes.”

“O mother, we'll lose our place in the line! Father'll catch up pretty soon. Probably he's chasing after some cow or horse that has strayed away,” said John, trying to speak lightly and assuming an ease of mind he did not feel. But as the dust covered wagons jolted out, one after another, to take their ordered places, he did not drive the oxen forward.



“A brotherly hand awkardly patted her hair”

Trace the picture of kind John comforting Mary and transfer design for coloring.

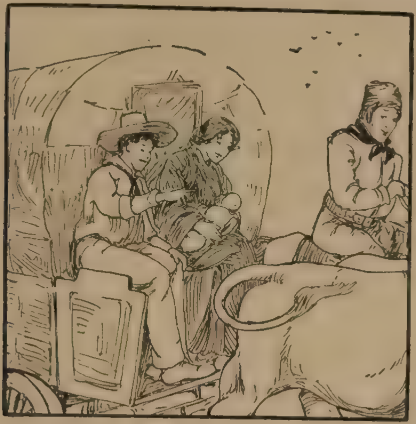
“This was Marcus Whitman himself”

“I'll go to the guide and ask him if I can take a horse and go back and look for father,” he said. “Don't worry. We'll come riding up soon.”

The guide consented, himself somewhat troubled. There were hostile Indians always hanging around the edge of the train and no one could tell what mischief they might do. The rest were sorry for the occupants of the one wagon left alone on the sandy plain, with only wheel-tracks and dead camp fires for company; but they could not wait for them. Every minute must be used in travel if they were to cross the mountains before the snows made them impassable. Even if a considerable number of the animals strayed they could not wait for them to be hunted up.

How still the plains became as the creaking of the wagons and the shouts of the drivers grew faint in the distance! John could hear his own heart beat. Some one had pointed out to him the direction in which his father had ridden off. There was no sign of him or of his horse. He must be behind that curious mass of rock, huge as a castle and as flat on top as a table, which rose so strangely from the level plain.

The great rock seemed very near in the clear air, but it was quite half an hour's riding before the boy rounded it. What was that dark heap on the ground? It was his father, lying oh, so still, with the patient horse, his reins tangled in the huddled form on the ground, standing quietly by. The horse had stepped in a rabbit or prairie-dog hole, and had thrown his rider, who had been pitched on his head on the rocks, and was unconscious. But as John dismounted and bent anxiously over him, he groaned and opened his eyes.



"He rode along beside their ox-team"

"Father," exclaimed John, "what can I do?"

The injured man groaned again.

"Oh, I don't know. Can you lift me on the horse?"

If old Prince had not been very gentle by nature, and a large share of the life worn out of him by the long journey, John never could have made him stand still long enough to do it. But he stood like a statue, and John tugged and strained, and the injured man helped himself as much as he could, so finally he got on the horse.

John walked beside his father and held him steady, as well as he could, leading the lame horse by the bridle, but every motion hurt. It had taken half an hour's swift riding to get to the rock, and a longer time to get the hurt man on the horse. How long it was going to take them to get to the camp there was no telling. And when they reached it there would be no one there except their one wagon and mother so weak and sick that she needed care herself!

John groaned aloud. What could he do? Oh, it was cruel in the caravan to go off and leave them; and yet he knew that if they did not make all possible haste they were all likely to perish in the mountains.

A black speck appeared on the distant horizon. It was a figure on horseback. Was it an Indian! Would he shoot them! Then what would mother and Mary and the new baby do? Perish alone on the plains of slow starvation? There was great danger of it. They might drive the oxen after the others, but would they catch up with them? John's heart sank like lead.

The figure on horseback came nearer. It was not an Indian, it was a white man; John's courage bounded up again. It must be one of their neighbors or friends in the caravan come back to look for them!

Oh, how grateful he would always be to that one who had cared enough to come back when there was such distressing need for hasty progress! Which one of them could it be! The good old friend who drove five wagons ahead of them? The fellow-townsman whose wagon was placed in the camping circle just at their right? The left hand neighbor? No, it was none of these. They cared, John knew, but they could not lose the time to go back.

There was only one man in the caravan who looked like that. As the rider came nearer John could distinguish the dignified, erect figure, more imposing than all the rest, although the clothes he wore were the very roughest, shabbiest and most worn of all. And it was little wonder, for the rest were only toiling over the six months' trail for the first time, but he was returning after a winter's trip infinitely harder, and which he had undertaken at the risk of his life simply to tell our hesitating government at Washington the worth

" 'Father,' exclaimed John, 'what can I do?' "

Trace or use carbon paper to transfer this design and color with paints or crayons.

of the then unvalued Oregon which they were about to let slip from their grasp. John's heart lightened as his eyes rested on the familiar old buckskin blouse and shabby shapeless cap, the iron gray hair and kindly eyes.

For this was Marcus Whitman himself; the most occupied, care-burdened, and most important man in the caravan—leader and director of all. He had missed in the long line of wagons the one containing the sick woman and new baby, and had ridden back to help them in whatever need they might be.

Oh, how relieved the boy felt as he delivered his burden and responsibility into Whitman's hands, and, at Whitman's kindly order, climbed upon his horse to ride ahead and reassure the sick mother! For this leader of theirs was a physician as well as a missionary. He knew what to do in every case of accident or sickness, and was their tower of strength.

The emigrant train would not drive away without *him*. They were dependent upon his leadership. No one else knew all the trails and passes. No one else was able safely to direct where the caravan should ford the rivers, just where they should camp to be safest and most comfortable, and just how to make friends with the threatening Indians.

This physician-friend knew just what to do for Mother as well as for Father, and what to tell John and Mary to do. He rode along beside their single, slow-moving ox-team for hours in order to be on hand in case of need; and when he had to go ahead for the sake of the others he promised to come back each night until the sick people had caught up.

Finally they came up with the others in safety; and, guided by Whitman's skilful management, they reached Fort Hall in time to get over the mountains before winter. There they heard the same old story from the fur company and their emissaries, who were determined to discourage if possible the settlement of Oregon.

"You can't take a wagon over the mountains into Oregon! It's no use to try! The pitches are too steep and terrible!" And they showed to the troubled immigrants wagons by the dozen, agricultural implements, tools, furniture, and hundreds of useful things that those who had crossed before had left behind them.

"You will risk your lives if you try to take your wagons over!" This they told, as they had told the others before them: "Pack what you can on the backs of mules and horses and oxen. Leave everything else! It is your only chance of getting through."

But Dr. Whitman said, "Men, I have guided you this far in safety. Believe nothing you hear about not being able to get through. Stick to your wagons and your goods. They will be invaluable to you when you reach the end of your journey. I took a wagon over the mountains to Oregon six years ago."

But the children's mother queried anxiously, "Shall we leave our wagon here as they tell us?"

"No," thundered father, who under Dr. Whitman's skilful ministrations had become entirely well. "Not if Whitman says to take it. We'll do what he says!"

Their trust was not misplaced. In company with all the rest of the caravan they crossed the perilous mountains in safety, and found Oregon even a better land of promise than they had dreamed.

LET US KNOW PEOPLE

The American frontier days began when the first English settlers landed at Jamestown and Plymouth. From then on the frontier was constantly moving, until the country was settled from coast to coast. Those who went ahead and prepared the way for others were called pioneers. The lives of these pioneers who opened up the frontiers were always difficult. They endured heat and cold, Indian attacks, lack of comforts, sickness, discouragement, and disappointments. They were brave because, without bravery, life was impossible. They were frugal, for there was little. Good management became the key to their life. They were helpful to each other, because each knew the need for help. They were sturdy, because weaklings died young. They were a strong brave race of men and women who fought the wilderness with matchless courage and perseverance, and learned by doing.

Make a list of pioneers. Find their pictures. Why are their faces called strong faces? What outstanding facial characteristics do they have? (square chin, lofty foreheads, eyes which meet eyes). You will note in your reading of the lives of these men and women that each had his or her own personality. Can you find it in their faces?

Create an album of pioneer portraits. Do your own sketching of their faces. Write a short character story of each to go with the portrait.

Draw pictures of the characters in the story. Place them in a booklet. Keep them for reference.

Weave a story about the Fur Company Messenger—wherein he had an opportunity to tell Whitman that he was only carrying out the orders of another.

The World We Live In

By EDWARD A. PARKER, Formerly Supervising Agent of the Connecticut State Board of Education, and Superintendent of Schools, Berlin, Conn.

Some of Nature's Works and Ways

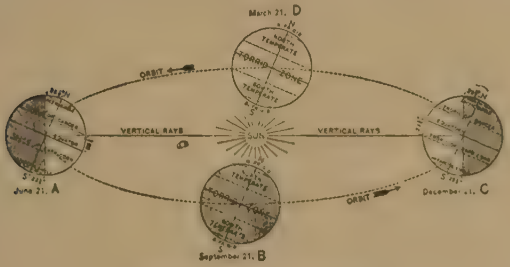
> If we can only come back to Nature every year and consider the flowers, and the birds, and confess our faults and mistakes and our unbeliefs under the silent stars and hear the river murmuring our absolution, we shall die young, even tho' we live long, and shall carry with us into the unseen something which will make it worth while to be immortal.—"*The Sign of the Balsam Bough*"—*Henry Van Dyke.*

TO THE child of six or seven years, whether in school or not, the world is a vast puzzle, and the source of innumerable questions; some simple, some hard, some beyond his ken, and some beyond ours. This chapter suggests some of the things which may be taught to the child, in the attempt to satisfy that insistent curiosity which is the mark of an eager and expanding mind.

LIGHT

Light comes from the sun. The sun is an immense ball of fire, millions of miles away, and the earth revolves around it, steadily, regularly. This light travels through space from the sun to the earth, with marvelous rapidity, 186,000 miles per second. At that, it takes a ray of light eight and one half minutes to travel from the sun to the earth.

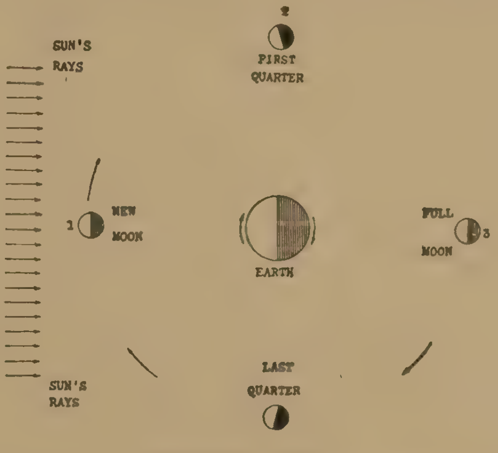
How far is it? and how fast is that? Well, if one of our express trains should start from the earth today, bound for the sun, and should travel a mile a minute, without stopping day or night, it would take 180 years to complete the journey.



Relation of Sun and Earth

This diagram shows the revolution of the earth around the sun. When the earth is farthest from the sun, it is 94,500,000 miles away. When nearest, it is 91,300,000 miles away. The variation is 3,200,000 miles, or a little more than 3% of the mean distance. Summer comes when the earth is farthest from the sun, because the sun's rays are direct; and winter when it is near, because then the sun's rays are slanting. In the diagram the difference between least and greatest distance is exaggerated.

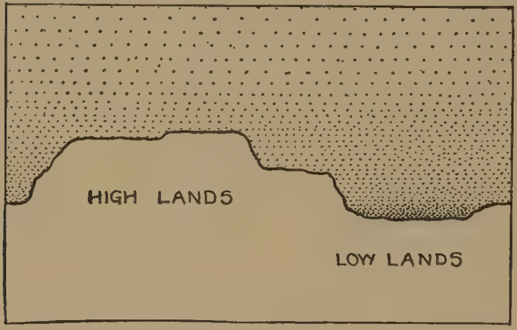
It is proper to think and talk about light first of all, because without light there would be nothing else on earth to talk about. Plants cannot live without light. We know that from observation. Watch the potatoes sprout in the cellar and try to grow, and they are slim, spindling, leafless, yellow things; stunted for want of light. Why is that? Because the green substance in leaves, called *chlorophyll*, takes the plant food secured by the plant roots, and, by means of sunlight, digests it so that it feeds the plant and makes it grow. In darkness the plants are fed. The accumulated food, prepared in the sunlight, is then distributed to all parts of the plant. Clearly, without the sunlight to digest the food, the plant will starve. But all animals live on plants, or on other animals who *do* live on plants. That is true of man. Therefore if the sun never shone we would soon have no plants, then no animals, and lastly, no men.



The Earth and Moon

The moon revolves about the earth in twenty-eight days. The relation between the sun's light and the light of the moon is here shown, also the reason for the so-called "phases of the moon."

However, this is not the only reason why we need the light of the sun. We need it to make us happy. Watch the plants and flowers, and see them respond to the influence of the sunshine. The birds and all animals show by their actions that they feel better and more cheerful when the day is sunny.



The Sea of Air Is Denser at the Bottom than at the Top

But the sunlight is necessary for health. If houses are tightly shuttered and dark, gloomy and damp, sickness is very apt to result. The best cleanser, next to water, is sunlight.

AIR

We live at the bottom of a sea, forty or fifty miles deep. We move along the bottom, perfectly unconscious of the fact, but still it is true. "But," some one says, "we thought the seas were of water, and that only fish lived there." Yes, that is a fact. The *water* sea does contain fish; but the sea of *air* contains men, and animals, and birds *swimming.* Do you know, flying with wings and swimming with fins are exactly parallel motions and with the same parts of the body, modified to suit the element?

What *is* the air? How does water differ from air? Why can we compare them so closely? Both contain *oxygen.* Oxygen is a colorless gas, which forms a part of the air, and also a part of water. Air is oxygen diluted with a gas called *nitrogen;* water is oxygen diluted with another gas called *hydrogen.* Nitrogen and hydrogen are merely gases to take up space, just as we dilute a strong medicine in water before swallowing it. And again, "What for?" Because the oxygen is too strong to be taken pure. It supports life. It purifies the blood. It is *the* thing which we must have in the air that we breathe. It is the thing that makes fire burn; and a smouldering ember, dropped into a tank of pure oxygen, will burst into flame of its own accord. If we were to breathe oxygen undiluted, it would drive us crazy, and we would die, the tissues of the body burned up, or consumed, by the fierce action of this life-giving gas. So it is diluted.

Now, the air is a thin mixture, with nitrogen, which will go into lungs without hurting them. Water is a dense or heavy compound. For, wonderful to relate, water is the compound of two kinds of gas, both invisible. If a jar of gas, one part oxygen and two parts hydrogen, is mixed, and then through wires, an electric spark made to flash within that jar, there will be an explosion, and real water will be found among the broken pieces of the jar. So we conclude that water contains oxygen; that water is a medium denser than air, which supports the bodies of the fish while supplying the oxygen which their gills extract in breathing.

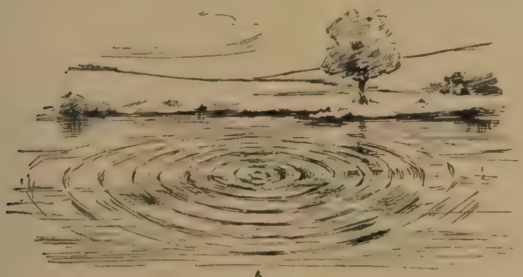
There is another wonderful fact that is true of the air, another thing which shows the marvelous way in which all of the elements of Nature depend on each other, and aid each other. When we breathe in oxygen, we breathe out a gas called *carbonic acid gas,* or carbon dioxid, which, in sufficient quantities, will suffocate animals or men. Think now of the millions of people constantly breathing out poison into the air, year after year. Why do we not all die? What becomes of it? Ah, there is the beautiful preparedness of nature. The plants breathe it in. Oh yes, plants breathe. They are alive, and all living things breathe, and eat, and sleep, and reproduce themselves after their kind and manner. So we must not be surprised to

"Our Friends, the Trees"

Forest vegetation. The leaves purify the atmosphere, the lumber is valuable, the dead leaves and branches hold the rain like a sponge, and the roots keep the surface soil from being washed away, or dried up. Standing forests prevent disastrous floods.

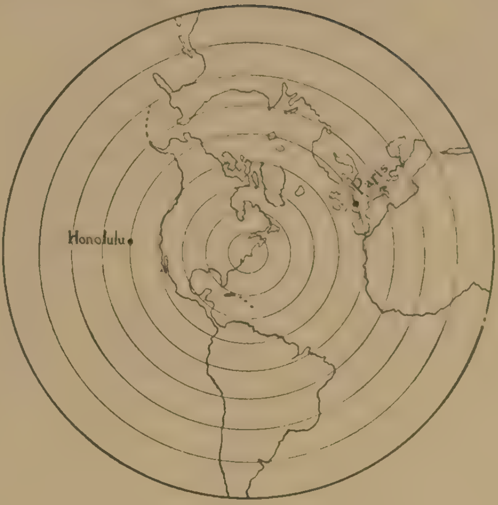
learn that plants breathe. They breathe *in* the carbonic acid gas which is poison to us, and they breathe *out*—what? What do you think? Why oxygen, the life-giving oxygen! So, plants are our dearest friends and should always be our neighbors, should they not? Plants are good in a room. Trees, shrubs, and lawns of rich grass are healthful.

There are other things that the air does. It conducts heat, light and sound. How can we see through this invisible sea that is over and around us, in which we are submerged? Why, because air permits light waves to pass straight through, without deflecting, or breaking, or twisting them. What do I mean by deflecting? Place a spoon in a glass half full of water, and then look at it. Where air and water meet the spoon seems bent. That is deflection. Now, if the air did that, think how it would be! We could see nothing straight, nor in its true position. Distant objects would appear distorted, and might seem higher or lower than they really were. We could not walk or run, for fear of running into objects that were not where they seemed to be.



A.

Circles of Ever-Widening Ripples Caused by the Throwing of a Stone



B.

Air Ripples Explanatory of the Principles of Wireless Telephone or Telegraph

And how does air conduct sound? To the people of today that is an especially interesting question, because the wireless telegraph and the wireless

QUESTIONS ON LIGHT AND AIR

LIGHT

1. What is the sun? How can it give light?

2. What is meant by "revolves?"

3. How fast does light travel?

4. How long has the sun actually risen before we see it?

5. Of what use is light to plants?

6. What is chlorophyll? What does it do?

7. How many ways can you name in which light is necessary to us?

8. What would happen if the sun never shone?

AIR

1. Why do we speak of a "sea" of air?

2. Try to compare the ocean and the sea of air in as many ways as you can.

3. What is oxygen? How is oxygen combined to make air? To make water?

4. The air is a "mixture" and water is a "compound." What is the difference?

5. What is meant by "combustion?" Describe the way in which oxygen supports flame.

6. How does oxygen support life?

7. Why is it diluted, both in air and water?

8. What is carbonic acid gas? How is it dangerous to human life?

9. What becomes of the carbonic acid gas, or carbon dioxid, that men and animals breathe into the air?

10. How is the supply of oxygen in the air renewed?

11. How can we see through the air?

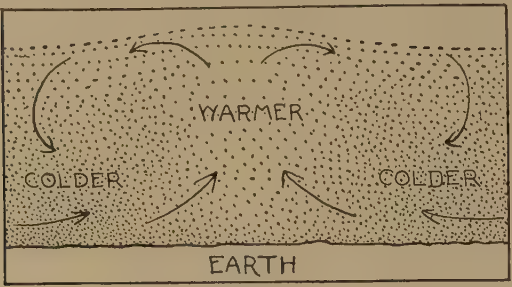
12. What is meant by "deflection?" Give an example. Does the air do this?

13. Illustrate the way in which the air conducts sound. Does water conduct sound well?

14. How is the wireless telegraph possible; can you guess?

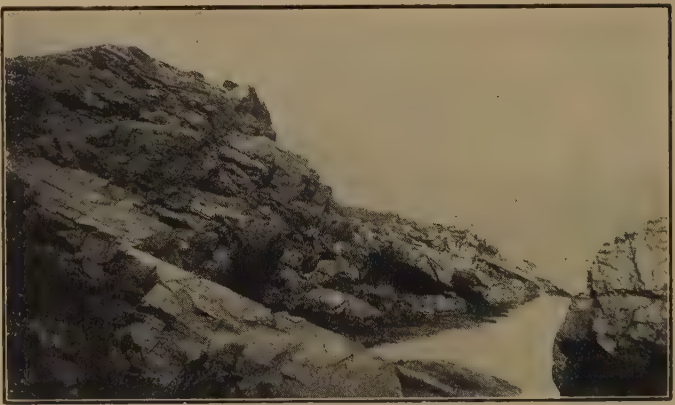
15. Why can wireless messages be picked up at many places at the same time?

telephone are talking for thousands of miles through the ocean of air, without wires or anything that can be seen. It is simple, when we compare with that other ocean—of water. If a stone were thrown into a quiet pool, and you did not see it, could you tell immediately afterwards that it had been thrown, and where it had landed? Of course, by the ripples, in ever-widening circles. Well, the air does exactly the same way. When a "noise" is made, that means that vibrations are set up in the air, which travel on and on in all directions until they are heard, or until they die away as the ripples do. For example, when the first wireless telephone message from Arlington, Va., was sent to Paris—it was caught also at Honolulu. How? On the other side of the circumference of the air ripple. Paris and Honolulu are about the same distance from Arlington, in opposite directions, and the air wave that reached the city in Europe, with its message of electrical disturbance, was the very same air wave that brought, at the same time, the same message to the island in the Pacific.



Circulation of Wind

The evaporation from the surface of the earth causes heated air and water vapor to rise from the heated surface of the earth, leaving empty space. Cooler air rushes in to fill that space. That rushing air we call "wind." The direction and force of winds are variously modified.



Surf-Beaten Rocks

There was a time when the whole earth had this aspect.

CLOUDS

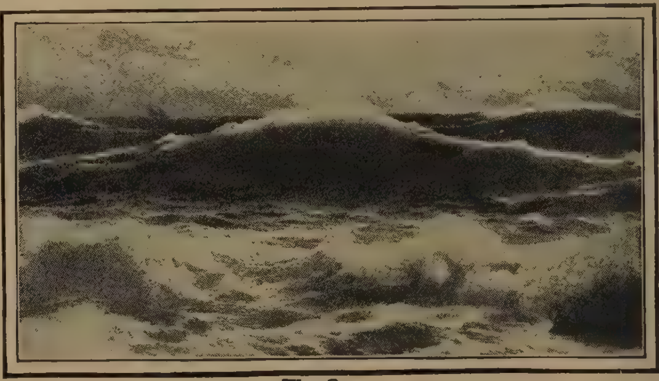
If a small dish or pool of water is allowed to stand in the sun, it very soon dries up. We say that it has "evaporated." That means, by the form of the word itself, that the water has become *vapor*, or gas. The heat of the sun has changed the water from a liquid into a gas, which, being warm, will rise in the air and mingle with the warm atmosphere as an invisible water vapor.

Again, when the teakettle boils, steam comes from the spout. If you want to learn what steam is, hold a cold plate in front of the spout, and see the drops of water collect. They have been condensed, we say, from the steam. Very near to the spout the steam is colorless, and if you are incautious enough to place your finger in that place you will find that it is very hot. Every housewife knows what it is to be scalded with steam from the cooking, or from the wash-boiler. Yet, at a distance of a few inches, the steam has become visible, and the hand, or even the face, may be placed in it without danger. So we deduce that steam—a water vapor that is very hot—becomes visible as a white steam-cloud as it cools.

Further, if a house is heated by steam, it is very necessary to have return pipes from the radiators, to return the condensed water to the boiler. The steam goes through the pipes, condenses, the drops run back to the boiler, are heated, and then start back again.

But, what has all this to do with clouds? What have teakettles, and cold plates, and steam pipes got to do with clouds? A great deal, indeed. They are the exact processes which go to the making of clouds.

All over the world, from the surface of river and lake and ocean, the sun is constantly evaporating water. This vapor floats in the air invisible until it meets with colder air currents, when, like the cooling steam from the teakettle, it becomes visible as a white cloud. Steam condenses on a cold plate, to form water drops. The cloud condenses in the face of a cold wind, to form raindrops. As the water drops in the steam pipes flow



The Ocean

Most of the water of the clouds comes from the surface of the ocean.

Mountain Stream

Besides wearing away the rocks, this stream serves as a channel to carry off surplus rain from the hills.

back to the boiler, thence to start forth again as steam, so the raindrops come back to stream and ocean and lake, to start forth again as water vapor.

The condition of the atmosphere, as to warmth, clearness, dryness, and the temperature of the winds which are blowing them along, modifies the clouds into several well marked and easily recognized forms. They are:

1. *Cirrus.* These consist of delicate streaks of a feathery appearance. They are usually seen in fine weather. Cirrus clouds are said to float six to seven miles above the surface of the earth. At that altitude the temperature is approximately 100 degrees Fahrenheit colder than at the surface of the earth, or 67° below zero. The cirrus clouds, therefore, are composed of nothing but ice particles.

The Solid Form of Water

Ice is at the other extreme of temperature from steam.

2. *Cumulus:* These are the great billowy masses seen in summer; which when lighted up by the sun look like snow mountains. The reason for this form is that during the heat of the day the currents of warm air rising from the earth are larger, and rise higher; and when the water in them condenses, it forms these massive clouds. Steam rising from the boiler of a locomotive will exhibit this form. By evening this form of cloud is usually altered. This is due to cooling.

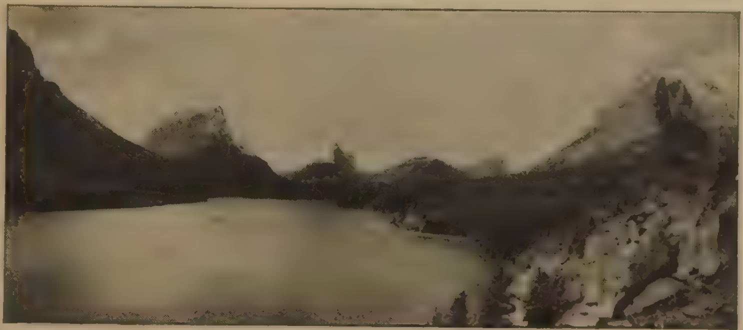
3. *Stratus:* This form consists of horizontal streaks or layers of vapor which float like a veil apparently near to the earth. They are often seen highly colored at sunrise or sunset.

4. *Nimbus:* The nimbus is our common rain cloud. It has no characteristic form. It is extended, and usually very dark. Clouds vary in elevation from one to six miles, although the stratus and nimbus often seem to lie even closer. By study it is easy to tell whether they are high or low.

WATER

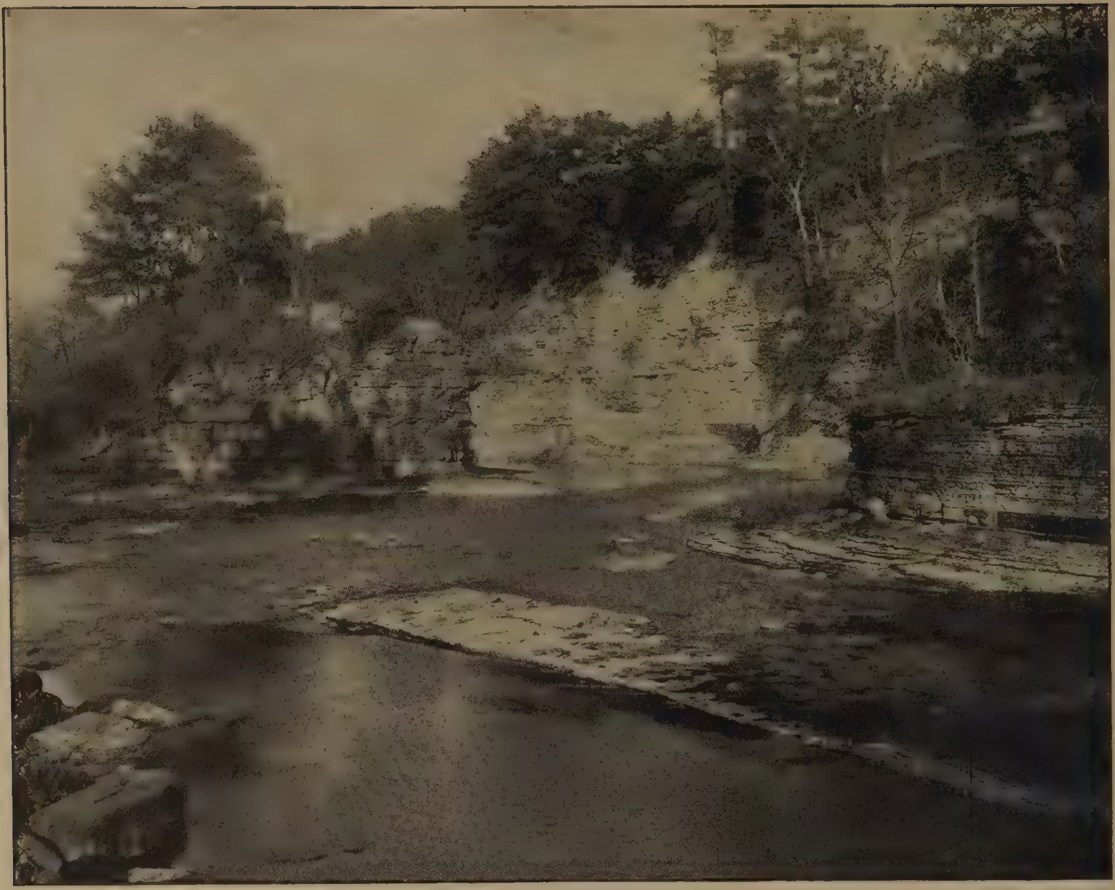
Rain:

The air above the earth is always in motion. There are currents of air, some high and some low, some warm and some cold, going in various directions. It is quite possible to look up into a summer sky, and see *cirrus* going in one direction, while *cumulus* or *stratus*, miles underneath, are going in another, quite opposite direction. You will understand, then, that cumulus or stratus *might* meet face to face with a cold current, coming from a point thousands of miles away. When that happens, the cloud water vapor condenses, the clouds become darker, as a yellow sponge becomes brown when soaking wet, and then it needs only a little colder temperature to make the vapor particles cling together and form drops too large to be held suspended in the cloud. When that happens, we say that rain falls. If the drops encounter cold weather near the earth, snow or hail results, depending on whether the cold is constant or passing. If it is winter, of course it will be snow, but hail may result in the summer, when the drops pass through an icy current of air.



St. Mary's Lake, Glacier National Park

This lake is caused by rain filling up a natural hollow or pocket in the hills. The famous Swiss lakes are similarly formed.



An Interesting River Channel

A river gorge. The top of the picture at the right shows the depth of excavation. The amount of rock carried away to make soil can be imagined. The two rocky points in the center show where the river has broken through a weak spot in a hard wall. The horizontal layers, or "strata" of rock may easily be seen. In the foreground, at water level, is a flat shelf of hard rock which is resisting water action. Try to imagine how the trees got into the places some of them occupy in this picture.

The rainbow is an arching bow of light usually seen in early morning or late afternoon, after a rain. If the rain is in the morning, and the storm is passing toward the west, the rainbow will be seen towards the west. In the afternoon, if the storm is passing towards the east, the rainbow will be seen in the east.

The rainbow is caused by the refraction of sunlight through the raindrops, and the breaking up of the white light into the three primary colors, red, yellow and blue, and the four secondary colors, orange, green, indigo and violet. The order of colors in the rainbow is therefore:

violet
indigo
blue
green
yellow
orange
red

QUESTIONS ON CLOUDS

CLOUDS

1. What is meant by "evaporation?"

2. What is steam? Can you prove that it is made from water? How?

3. What color is steam? How can you see it?

4. What is "condensation?" When there is much steam in the kitchen on a cold day, in what condition will you find the window-panes? Why? What has happened?

5. How are clouds formed? Where does the vapor come from?

6. How can we prove that the sun really does change water into vapor?

7. What things determine the form of clouds?

8. Name four different forms of clouds. Describe each form.

9. Which form is highest in the air? Lowest?

10. Which form is coldest? Warmest? Which has the greatest amount of moisture? The least?

In the mist over a waterfall the rainbow may be seen. Rainbows can be made at home by letting the sun shine on a beveled handglass, or a three-sided piece of glass (called a prism) or on a cut-glass stopper.

Uses of Water: First, it is a cleanser—animals and plants, as well as men, like to bathe in water. The rain washes the dust from the leaves, so that the sun can get to the chlorophyll, and so that the breathing pores of the leaf may be clean.

Water quenches the thirst of plants and animals. It constitutes the principal element in every part of creation. The earth is three-fourths water and only one-fourth land; our bodies contain much water; the blood is largely water. Milk is ninety per cent water. Fruits and vegetables are largely composed of water. The sap of trees is largely water. Roots get their food from water, which dissolves the plant foods in the soil, and thus makes it possible for the plants to drink them.

"Where men foolishly take away the trees, the water strips the soil from the earth's surface, leaving the rock bare."

Water has many uses. We sail over the seas; we use water in our boilers to propel our ships; we use water power to run our mills. We use ice, which is only the solid form of water, at the other extreme of temperature from steam, to preserve our foods from decay.

Why Rivers Need Control

If left to itself a river can do a great deal of damage to farm land. The sudden melting of snow and ice, heavy rainfall or the choking of the channel by a landslide may cause the river to overflow if its banks are not protected by levees. The picture shows the effect of the wash of flood waters where nothing was done to keep the river under control. Valuable top soil has been deposited among rock debris, and as the banks have been built up, the river has been forced to cut a new channel.

Water forms the home of lobsters, shrimp, oysters, clams, and the numerous forms of fish which are used for food.

In various places we find so-called mineral springs. These are springs of water which, down in the heart of the earth, have met with and dissolved various mineral substances, some of which have a value as medicine. Other springs are hot springs. They have come in contact with the fires that light the interior of the earth, and come up to the surface steaming hot. When people have certain diseases they bathe in these springs. Many of them are cured.

THE WORK OF WATER

Besides being the most useful element to man, water has definite work to do. One part of that work we saw in talking about springs. The other kind we call *erosion.* That is a word that means *eating away.* The water eats away the surface of the earth. "How destructive," you say; and "why do we not lose all the surface soil of the earth?" Well, partly because the water served to make most of it, in the first place; and partly because our friends the trees spread their protecting roots, like arms, over the soil, and will not let the water have it. Where men foolishly take away the trees, the water does strip the soil from the earth's surface, leaving the rocks bare. But, the soil was made by the water in the first place. How? It is an interesting story.

Let us go back to the beginning of our world. The mighty rocks into which the cooling earth-mass has hardened are thrown

An Example of Erosion

A natural gorge. The bridge is the base of a triangle of which the river bed is the apex. That triangle represents the rock and soil which this stream has excavated and carried away.

by the shrinking of the mass into great mountains and valleys, and over all hangs a mighty cloud of steam. It rains constantly; and the heated rocks send back the rain as steam. Finally the earth is cold, and the vapors condense and fill the great earth valleys, making the seas and lakes; and the blue sky appears. The world is one great rock, in the midst of warm seas. The sun at once begins to draw up water vapor, and clouds float in the sky.

Blackfeet Glacier

This glacier is in Glacier National Park. The snow and ice, traveling by force of gravity down the mountain valley, act like a scraper, carrying rocks and soil down to the lowlands. Where the glacier melts, there the soil is deposited.

Flood Plain

This represents the final step in the leveling action of water. These meadows are covered with soil washed down from the hills. The river can no longer carry soil except in flood. The rounded hill in the background has resisted erosion; it is presumedly of some hard rock.

Rain, snow, hail and ice form, and the transformation of the earth's surface by water has begun. The rocks are heated by the sun and cooled by the rain and frost until cracks appear. Water gets in those cracks and freezes and breaks off large boulders. These fall to the foot of the cliffs and are broken. Those that fall on the sea beach are pounded by the waves against the shore cliffs until they are broken into bits. Those that fall into land valleys are washed down by rivers, which are

Lower Yellowstone Falls

This majestic gorge has been hollowed out, through the centuries, by the river. The falls mark the position of a harder resisting layer of rock which wears down more slowly than that below.

merely drainage canals for the rain and snow of the mountains. Some of the substances in the rocks are dissolved, as lime and potash, and the other substances crumble, as do sandstone and shale. Some of the rocks thus form soil, which is carried down into the valleys by floods, and deposited over the rocks, in this way preparing a place for plants to grow. The rivers too, start digging a deeper channel for themselves. All the material thus dug out by water is carried down toward the sea, and deposited on the river or sea bottom. In the course of the centuries it hardens into rock. Then, perhaps, an earthquake may lift it again above the surface of the ocean, as, for example, the Philippine Islands have been lifted, and the work of water begins all over again. When soil has been formed, plants begin to grow, and then animals come to live on the earth. Finally man appears, and finds the world ready for his use, with plants and animals ready to serve him.

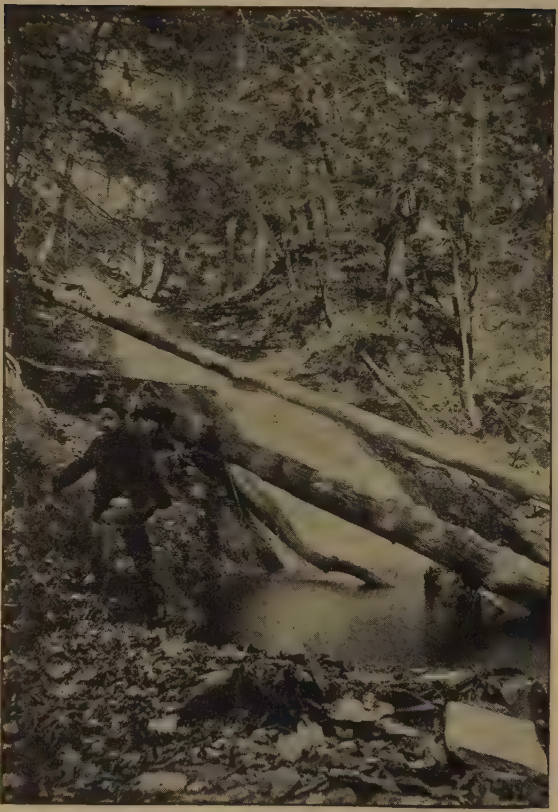
But has the water stopped working? By no means. Look out in the meadow in the summer time, and see how green the grass is beside the brook. Look at the river in the springtime when it is in flood, and see how muddy it is. Where does that mud come from? Where is it going to? It comes from the hills and fields, and is washed down into the brooks by the spring rains. It is going to float along in the water until the river gets down to the level land where it goes very slowly, and then it will settle to the bottom and fill up the channel. Some day that river will get so full that the flood waters will cut a new channel for themselves, and then the old bed will become a meadow and will be part of the farm of the man who owns that field. Then the water has stolen that land from up-river, and presented it to somebody living down-river? Exactly so.

"How can we stop that?" Very simply. By planting trees on the hillsides where once the forests used to be. The hills shed the water now like a house-roof; and so every heavy rain means a flood, and means that the soil is dug from the slopes and carried away to enrich some field miles away down the valley. Trees act like sponges. Their roots make a network in the soil, to hold it together. They re-enforce it, like the iron rods in concrete walls. The dead leaves on the ground soak up the rain that falls, allow it to sink slowly into the soil, and instead of pouring into the river in a day, to find its way into the vast underground lakes and rivers,

Formation of a Swamp

These water plants are choking up the stream, and will some day form a swamp. The decayed plants will form humus. In Ireland there are swamps in which the humus has hardened into "peat," which is like what coal must have been, ages ago. Peat is used for fuel.

and so keep the springs flowing all the year round. In this way the soil is preserved, the water is saved, the springs do not dry up in the summer, and there is no dry season to kill the crops.



Work of a Mountain Stream

This mountain stream, during the flood season, not only carries sticks and stones down the valley, but uproots trees, which some day will be turned into humus soil.

TREES

We have already seen that trees are very valuable. We have learned that their breathing purifies the air for us to breathe, that their root arms hold the soil on the hills, and that their leaf garment over the earth holds water like a sponge, for the other plants and for man. Trees have many other uses. First, the decayed leaves, branches and trunks of trees are the richest kind of soil. The rich black soil that we call muck is composed of decayed and well mixed *tree soil* which is called *humus.*

There are four classes into which we may divide trees, to get better acquainted with them.

These are:

Fruit trees, as apple, pear and peach.
Shade trees, as elm and maple.
Nut trees, as chestnut and hickory.
Lumber trees, as hemlock, pine, and ash.

We should learn to recognize trees by the leaf, the flower, and the fruit. Lumbermen also recognize trees by the bark and by the "look" of the wood itself. I have named one or two familiar trees under each class. These should be learned, and as many more as possible. Some might be classified in more than one way, but that does not make any difference. We wish to remember them for their most common value.

SEEDS

The most valuable, and also the most interesting part of a plant is the seed. It is the most valuable because it is so often the part that is good for food, or else some part connected with the seed is eatable. For example, all the common fruits, the apples, pears, peaches, plums, grapes, oranges; and the more unfamiliar ones, such as dates, figs, pomegranates and cocoanuts, which grow on palm trees; and the cucumbers, melons and squashes, which grow on vines: all of these widely scattered varieties enclose their seeds in an edible pulp, or "meat." Animals, birds and men seek them out for food.

The seeds are the most interesting because the plant reproduces itself through the seeds. I mean by that, that new plants are grown by planting the seeds in the ground. In the case of garden plants, either flowers or vegetables, that may be very

QUESTIONS ON WATER AND THE WORK OF WATER

WATER

1. What are air currents? Can you tell what causes the air to form currents?

2. When the air moves steadily in one direction, what do we call it?

3. How do we distinguish, by name, between fast and slow currents?

4. How are clouds forced to let fall the moisture that they are carrying?

5. What forms may that moisture take?

6. What is the rainbow? How is it formed?

7. Name the colors in the rainbow. What is that arrangement of colors called?

8. What is a prism? How can it produce the rainbow colors?

9. Name as many uses of water as you can.

10. How are springs formed?

11. What are mineral springs? Hot springs?

12. What are the uses of these springs?

THE WORK OF WATER

1. What is erosion? How does water eat away the surface of the earth?

2. How do trees preserve the soil from the action of water?

3. Can you describe the steps in the formation of the rocks? Was it a long or a short process?

4. Is the formation of soil today a rapid process?

5. Do the hills change their form? How do you know?

6. How do rivers carry rocks and soil in the spring?

7. How can we stop the water from carrying away soil from our hillsides?

easily seen. Corn, beans, peas, lettuce, squash, cucumbers, melons—all are planted and cared for in order to have the vegetables later, to eat. For the home garden, tomato plants are usually bought half-grown; but they grew from seeds just the same.

It will be very interesting to watch seeds begin to grow. Take a few ripe seeds of corn, beans, or peas, soak them until they begin to swell, and then place them on wet blotting paper, in a place where there is plenty of light. Keep the blotting paper wet. Soon the skin of the seed will split, and two tiny leaves will come out. A little root will also show. It will be possible in the case of the bean to split the seed into two parts, before it sprouts, and show the tiny leaves in place.

WEEDS

The farmer says that weeds are a nuisance; the gardener says that they are a crime; but the dictionary says that a weed is any plant that is out of place, that has intruded where it is not wanted. So, in the hayfield, buttercups and daisies are weeds, because they do not make good hay. In the garden, any plant that is not good to eat is a weed. On the lawn, dandelions are weeds; but in a field by themselves, if they could be kept there, they would pass for a respectable vegetable, and not a weed at all; for they certainly are good to eat.

Now, if all plants grow by seeds, and weeds are plants that insist on entering places where they are not wanted, it follows that if we can keep them from producing seeds we can control their growth, or else do away with them altogether. That leads us to the very delightful study of how plants produce their seeds, and how they manage to get them scattered widely. That is just as necessary to plants as to produce seeds. Seeds must have room to grow; and if all seeds fell, year after year, under the parent plant, not even grass could spread and cover the bare soil of the fields. So plants have invented ways by which the seeds may be widely scattered.

First, how do plants produce seeds? If you will take any large flower of the open or lily shape, and look in it, you will see that there is a ring of little stalks, each with a head covered with yellow powder. In the center is a stalk, whose base is a swelling in the bottom of the flower. The little stalks are called *stamens*, and the powder is *pollen*. The central stalk is the *pistil*, and the swelling at the base is the *ovary*. Here is where the seeds are formed. When the flower is open, the pollen falls on the pistil, and, in some way, fertilizes the seed-germs, so that the seeds develop and ripen. The ovary becomes the fruit, in the varieties named above. In the grasses, including the valuable grasses classed as grains, such as oats, wheat and rye, the ovary develops into a grain, or seed.

Bees, wasps and bumblebees help in the process of putting the pollen on the pistils of flowers, as they climb in and out of the flowers, looking for the sweet juice of the flower called *nectar*, of which they make honey. They get pollen on their legs, and then rub it on the pistil of the flower as they crowd in, looking for nectar.

Many seeds are blown about by the wind. Grass and like seeds are of this class. There are plants whose seeds form within a ball, which rolls along the ground and drops seeds as it goes. This plant grows on the sea beach. Dandelion and milkweed have little cotton sails on which the seeds float through the air. Burdocks and some others have little burrs covered with hooks. The seeds are in the burr. The hooks catch on to the clothes of persons, or the hair of animals, and thus are carried long distances, distributing seeds as they go. The wild berries are eaten by the birds, and the seeds which the berries contain, which are indigestible and therefore unharmed, may be deposited by the bird a thousand miles away from where they grew. These are some of the common ways in which seeds are scattered. It will be worth while to try to discover by observation other ways by which seeds are distributed, and other forms in which seeds appear.

CLOTHES

It may not be possible to teach the child all about the manufacture of different kinds of cloth, even when he has reached a point where he is ready to comprehend more or less of the processes. The

Raft of Logs Being Floated to the Saw-Mill

Apple Blossoms Showing Stamens and Pistils

best way to do this, in any case, is to visit a manufactory and see the **actual** operations. A shoe factory, or a "made to order" clothes manufactory would prove wonderfully interesting and instructive.

However, there are certain things that may be learned.

First, there are, in general, four sources of material for clothes. They are:

1. Plant fibers.
2. Animal product—silk.
3. Hair of beasts.
4. Skins of beasts.

Cotton:

Cotton is a fiber of a plant which is closely related to the common hollyhock. It was first seen by the famous traveler, Marco Polo, in Asia, about six hundred years ago.

When our country was settled, about three hundred years ago, people had already learned to make cloth of the cotton, so it was brought to this country, and planted in the warm, moist lowland plains of the south. Two kinds of cotton are grown in our country—sea-island cotton and upland cotton. Sea-island cotton is grown on the islands and low coastal plains of South Carolina, Georgia and Florida. The fiber is longer and finer than that of upland cotton, and is much used in making thread.

Upland cotton is grown in large quantities on the uplands lying between the Atlantic and Gulf coastal plains and the Appalachian mountains. The state of Texas, which is the largest state in the Union, grows the most cotton. The seed is planted in March or April. This takes a great deal of preparation of the soil. The land must be ploughed and harrowed very smooth. Then it is bedded up into ridges four feet apart. After all danger of frost has passed, the seed is sown in the ridges by a machine.

As soon as the young plants have grown enough to have four leaves, they must be thinned by hand. The blossoms come in July or August. They are cream-colored at first but change to pink and red. In three or four days they have become fertilized, and the colored petals fall off. The ovary, which is here called a *boll*, begins to grow. It grows to be as large as a hen's egg. The boll has from three to six cells, which contain seeds wrapped in a soft, white, downy substance which we call the cotton fiber, or lint.

When the seed is ripe the bolls burst open, and the stalks are then covered with white balls, which are very pretty. It is very probable that this is Nature's provision for getting the seed scattered, as the cotton would be carried away by birds for nest building. The cotton is picked by hand, as no machine has yet been invented that will do the

QUESTIONS ON TREES AND SEEDS

TREES

1. Name some of the important uses of trees.

2. What do trees breathe out into the air?

3. What does the leaf blanket over the soil do?

4. What do we call decayed leaves? What is it good for?

SEEDS

1. How many fruits can you name? What form has the seed in each case?

2. How many vegetables can you name? Do they grow from seed?

4. Describe a method for making seeds sprout. What two parts always appear in a sprouting seed?

5. What are weeds? Why are they a nuisance?

6. How can you tell if a plant is a weed?

7. Name the principal parts of a flower. What is the use of stamens; of pistil; of ovary?

8. How do insects help to fertilize flowers?

9. Do the grains, as oats, wheat and rye, have flowers? What color are they?

10. Of what use is perfume to a flower?

11. Why are the petals of flowers often colored?

12. Tell as many ways as you can in which seeds are distributed.

work. The work is not hard, and is done by men, women and children. Pickers vary from fifty to three hundred pounds of cotton per day. One hundred pounds is considered a fair day's work. The pickers are paid from forty cents to one dollar for each hundred pounds of cotton. It takes three pounds of cotton to make one pound of cotton fiber after the seeds have been removed, so you will see that cotton picking, while not paid very highly, is very expensive for the planter.

The seeds are tangled in the fiber, and have to be removed before the fiber can be spun into yarn. This used to be done by hand, and was a very slow and expensive process, one person being able to clean only one pound of cotton in a day. In 1793 an American by the name of Eli Whitney invented a machine called the cotton-gin which does this work. Three men with a good cotton-gin can clean ten thousand pounds of cotton in a day. The gin is arranged with sets of teeth like combs or saws, which pull the lint off the seed. Brushes sweep the lint from the swiftly moving saw teeth, and a fan blows it back into a room prepared for it. It is then squeezed into great bales, and shipped to the cotton mills.

Flower of the Cotton Showing Boll Forming

Formerly the cotton seeds were wasted, but many uses have now been discovered for them. They are heated and ground, and the oil squeezed out. Then they are pressed into cakes to be used as a food for animals and as fertilizer. The cotton-seed oil is burned in miners' lamps, made into soap in place of cocoanut oil, and used in cooking in place of olive oil.

The mass of cotton in the bales is composed of very thin fibers from half an inch to an inch and a half long. The first thing that is done in the mill is to clean the cotton, and arrange it in laps or rolls. The tangled mass is thus straightened out, and the very short fibers removed. The fibers are then spun into threads, two or more fibers of the cotton being combined into a single cord. It is said that a pound of cotton fiber may be spun into thread so fine that it will reach from New York to Chicago, a distance of one thousand miles.

An interesting fact just here is in connection with the common word "spinster," which we use to mean an unmarried or single woman. Formerly all the spinning was done by hand in families, and was the exclusive task of the unmarried women of the family. Hence the word has come to be a name for any unmarried woman, although spinning is no longer done in the houses. It is done by machinery, and there are in this country over twenty-two million spindles for the spinning of cotton thread, which are run by machinery.

Formerly weaving was done by hand-looms, great clumsy wooden frames on which the thread was stretched, but today there are more than half a million power looms for the manufacture of cotton cloth. In making cloth, long threads are first placed lengthwise in the looms. These are wound on spools at the further end. They are crossed by other threads. The long threads are called the warp, and the short threads that cross them, the woof, or welt. The interlacing of the threads forms the cloth. The thread of the woof is passed back and forth, between the threads of the warp, by means of a shuttle.

More cotton cloth is made in the United States than in any other country. Most of it is made in New England, in the cities of Fall River, Lowell, Lawrence, Salem, New Bedford and Manchester. Recently the South has taken up the manufacture of cotton cloth. We manufacture calico, gingham and sheeting. Much of the finer and more expensive cotton cloth we buy from England, France and Germany.

Cotton Boll

Old Method of Weighing in Cotton

Wool:

The long hair of the sheep is called wool. In the Western states, and to some extent in the East, sheep are kept in great flocks. They wander over the hills, protected by a sheep herder and his dog. In the spring, when the winter coat is longest and least necessary, the sheep are sheared. Sometimes they are driven to the railroad stations to be sheared, thus carrying their own wool to the places from which it may be shipped. After the wool has been sheared, it is shipped to the factories where it is sorted. Then it is washed in lye and clean water to get the grease out of it, the dust is blown from it, and it is picked over by hand to remove the knots. Then the fiber is spun into yarn. In making woolen cloth, the wool is simply spun into loose thread. But in making yarn for worsteds, the wool is combed and twisted until the thread is very hard. The cloth is then woven in great looms that are like the looms for making cotton cloth. After the cloth is woven, it is soaked in water and soap, and beaten with wooden mallets to get out the oil and dirt. Then it is washed and dyed. It is washed again, and stretched upon frames to dry. It is then washed again, and pounded or rolled in order that the fibers may *felt* or crowd close together. This causes the cloth to shrink very much, but it becomes thicker. The cloth is then pressed, folded and packed, and is ready to be sold. Now that you see the greater work that is necessary in making woolen cloth, you will understand why it is so much more expensive than cotton cloth.

Demonstrating a Cotton-Picking Machine

Skins:

The raw skins of animals are called hides or pelts. Usually such skins as may be made into leather are called hides, while valuable fur skins, such as otter, mink, beaver, fox and ermine, are called pelts. Formerly buffalo, deer, elk and bear skins were plentiful, and were much used by the Indians and frontiersmen for clothing, but now they are scarce. The other pelts named above are found in Northern Canada. In 1670 a great company was formed by Englishmen, called the Hudson Bay Company, to buy pelts from the Indians. They were granted the entire territory watered by the rivers flowing into Hudson Bay, and for two centuries were the despotic rulers of the Indians, half breeds and whites, and fought trespassers bitterly. They became enormously wealthy. In 1870 the territory was ceded to the Dominion of Canada, under the name Rupert's Land.

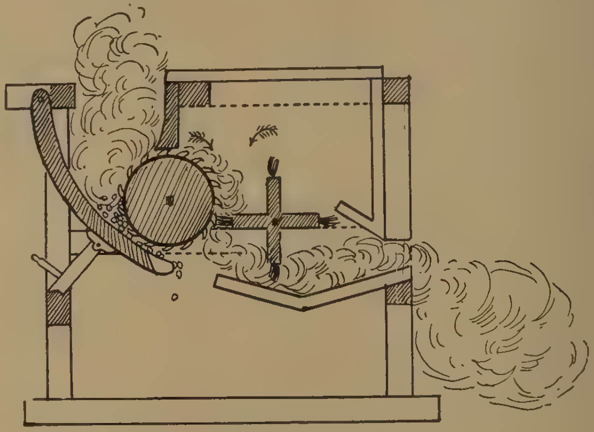
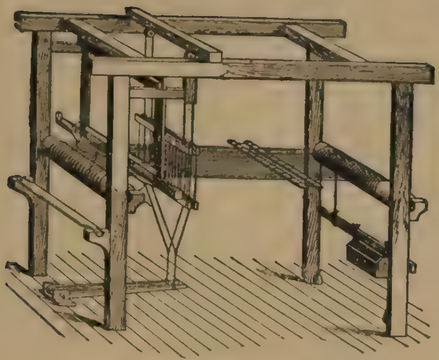


Diagram of Whitney's Cotton Gin

In the Northwest, in Oregon, John Jacob Astor founded Astoria in 1811. The business of the Astoria Company was, like that of the Hudson Bay Company, trading in furs. Astor connected his New York fur-trade with the Northwest by a line of fur stations extending along the great lakes and the Missouri and Columbia Rivers. His fortune at his death was estimated at $20,000,000. In those days furs were plentiful here, but scarce abroad. Today they are much more scarce here and higher in price. They are used for garments, hats, gloves, muffs and tippets.

Besides the hides from cattle, the trade uses the hides from sheep, goats, pigs, horses, kangaroos and alligators. From the skins of cattle are made boots and shoes, and harness. From pigskin, saddles, book bindings, hand bags, and even football covers. From the skins of sheep and goats are made leather for book binding. Dog skins are



Model of Hand-Loom

used for gloves. Kangaroo and alligator leather is used for small fancy articles.

After the skins have been taken from the animals they must be carefully prepared before they can be used. They are green hides, covered with scraps of fat and flesh, and if not properly taken care of will spoil. This process we call tanning. The Indians prepared hides by scraping them, rubbing them with ashes, and then with the brains of the animal itself. They were able to dress deerskin until it was as soft and pliable as cloth. They ornamented it by sewing beads on it, in beautiful patterns.

In trade today, leather is tanned in great factories. The hides are first washed and scraped, and then are put to soak in vats of water, in which is placed the finely ground bark of the oak or hemlock tree. This bark contains a substance called *tannin* which preserves the skin from decay. From this comes the word "tannery." The hides are soaked in the liquor of this ground bark for a couple of weeks or more. Then they are washed and dried. The leather is hardened by being passed between heavy rollers, which iron it out smooth. The leather intended for shoe tops is split by a machine, and rubbed with oil or tallow.

Shoes are made in great factories. The greatest shoe city in the world is Brockton, Mass. The uppers, soles and heels are first cut out by a pattern, by machinery. Then girls stitch the different parts of the uppers on sewing machines. Then the soles are sewed to the uppers by machines, and the heels are nailed on by another machine, that uses nails cut from steel wire and driven into the heels at the same time. A pair of shoes can be made in less than half an hour. Most of the cutting is done by

African Zulus Scraping a Hide in the Process of Tanning It

QUESTIONS ON CLOTHES

Cotton:

1. Where and by whom, was cotton first seen by a European? How long ago was that?

2. To what common plant is the cotton related?

3. What two kinds of cotton are grown in this country? What state grows the most cotton?

4. How is the land prepared for planting cotton?

5. Describe the cultivation of cotton.

6. Where is the cotton found? What might have been its original use, in nature, before men learned how to use it?

7. How is cotton picked?

8. What is the cotton-gin? When and by whom was it invented? What does it do?

9. What effect did this invention have on the cotton industry?

10. What uses are made of the cotton seeds?

11. Describe the process of weaving.

12. In what cities in this country is most of our cotton cloth made? From what European countries do we get expensive cotton cloth?

Wool:

1. What is wool? In what part of this country is most of it produced?

2. Describe the process of preparing wool for spinning.

3. How is the cloth treated after it is woven?

4. What is meant by "felting?" What is the use of this?

Skins:

1. What distinction is sometimes made between hides and pelts? Name some of each kind.

2. What was the Hudson Bay Company?

3. Where was Astoria? When and by whom was it founded?

4. How are skins prepared for use?

5. How did the Indians do this?

6. What effect has the leather business had upon our forests?

7. Describe the factory process of making shoes.

8. How many different uses of leather can you mention?

This is a good place to call the attention of the children to their own clothes and the material of which they are made—cotton, wool, etc.; what kind of leather in their shoes and from what animal it was taken.

men, but the sewing-machines are operated by women. One woman can sew from seven to eight hundred pairs of shoes in a day. Leather can be treated until it is water-proof. It is then used for carriage and automobile tops. This country leads the world in the manufacture and export of leather, boots and shoes, and leather goods.

COAL

To understand about coal, we must go back in mind to the days when the earth was young, to the time already described when the rocks were being formed under the ocean from the dirt washed down by the water.

As soon as there was soil, plants began to grow. To say where the first seeds came from is impossible. There were neither animals nor men on the earth in those days. There grew then great ferns, and trees of immense height, and for centuries they flourished and died, and built up deep layers of humus soil. Then there came a day when the land was plunged beneath the ocean, by one of the *wrinklings* due to its cooling and shrinking. The deep layer of humus soil was covered up by the soil brought down by the water. As this soil hardened into rock under water pressure, the humus was slowly pressed too, into a firm, hard, black, rock-like substance. Then there came a day when another twist of the shrinking earth-crust lifted these rocks once more above the ocean. The rocks were covered with soil, and once more the great trees flourished. Then again the deep layer of humus, again the ocean plunge, and the hardening into rock. This series of changes took place several times over. The hardened humus we call coal. We find coal between layers of fine-grained rock, which we call shale, or slate, and the number of layers indicate the number of times that the territory was submerged during the coal-making period. Each layer of coal is called a seam, or a *vein.* The coal veins vary in thickness from a few inches to thirty or more feet. In some places the veins are level, and the coal can be dug out very easily. Elsewhere the beds lie slanting in the earth. They are said to *dip.* In many places the beds appear at the surface. That is called an *outcrop.* In other places the miners must go down as far as fifteen hundred feet to find the coal.

The hardest coal is called anthracite, and is found principally in Eastern Pennsylvania. The soft coal, which is called bituminous coal, is found in western Pennsylvania, Illinois, West Virginia, Ohio, Alabama, and in many other States of our country.

There are different ways of mining coal, according to the manner in which it lies. Surface coal is mined by uncovering the beds and digging it out of the hole, in some such manner as stone is quarried. This is called *stripping.* Veins of coal lying near the surface are called *drifts.* If the coal outcrops above a valley or stream, all that needs to be done is to drive in a tunnel and drag out the coal in baskets or wagons. Mule cars on little tracks are largely used for this kind of mining. Where the coal slants or "slopes," or where it lies deep under ground, the only way to get at it is to sink a shaft down to it, and then drive tunnels to follow the veins. Most coal is mined in this fashion.

A shaft is like a deep well, usually twelve feet by thirty, with the sides braced with heavy timbers. This is divided into compartments, with elevator shafts, to take the men and mules and cars in and out of the mine, with ventilating shafts, and pipes for pumping water from the mine. There is always water in a deep mine. The water that sinks down into the earth, you will remember, goes down through the crevices in the rocks to make under-ground streams and pools. Therefore, when those rocks are cut across, the water drips into the various tunnels or cuttings, and in time would flood the mine if it were not pumped out. In the same way, the air of the mine would become foul and unfit to breathe if it were not constantly renewed. Carbonic acid gas is found in great quantities in deep mine shafts and tunnels, and men could not work without a constant supply of fresh air. This gas is heavy and lies near the floor of the tunnel.

The main entry from the bottom of the shaft is called the gangway. That is extended, side entries are dug, and from the side entries passages are cut at right angles, running parallel with the main entry.

Blocks or pillars of coal are left standing to hold up the roof, but as these would by no means support the great weight of rock, the miners put up hard-wood posts to support the roof. In spite of the care that is taken, however, not a year passes that men are not killed or injured by falling slate and rock. Another danger is from gases. The carbonic acid gas, already mentioned, is called "choke-damp." In mining the coal explosive gases, called by the miners "fire-damp," are liberated. Unless good ventilation is maintained in the mine, these collect near the roof and cannot be easily detected, but miners coming along with little lighted torch-lamps in their caps may set this gas afire. The result may be an explosion that will sweep the length of the mine. To protect against this, safety lamps are used in many mines. Modern mines are lighted by electricity. Fires often result from explosions, and men have been trapped in distant cuttings by fires which they could not pass through. The "choke-damp" which comes after a fire in a mine, is nothing but the carbonic acid gas produced by the using up of the oxygen by the flames. The miner who escapes the explosion and the fire may live to be suffocated by the carbonic acid gas. Add to all these the danger from flooding of the mine, and we may appreciate the dangers that have to be faced by the men who dig our coal.

Coal is loosened in the vein in one of three ways. On surface drifts, or outcrops, the pick and shovel are used. Under ground, in anthracite, the coal is usually blasted. Holes are drilled into the face of the heading, powder or dynamite is placed in it, and the charge exploded by a fuse or electric spark. The coal that falls down is shoveled into cars and sent up, and another "shot" is prepared. There are two dangers in this method. First, that the roof will cave in under the explosion. Second, that the explosion will set fire to the "fire damp." Machines that are run by compressed air or electricity are now largely used for this work. They cut the coal into huge blocks as easily as one would cut bread with a knife.

After the coal has been loosened, it is taken in little cars to the bottom of the shaft, and lifted to the surface. These cars are usually drawn by mules, though some mines now have electric cars for the purpose. Anthracite coal is then sent to a crushing machine, or "breaker." There it is crushed, and sent through a trough beside which sit boys to pick out pieces of stone that may have gotten mixed with the coal. It is then passed over various screens, which sort it into uniform sizes. These sizes are called lump, egg, chestnut and pea coal.

The soft coal, besides being used for factory boilers and locomotives, is largely used in making coke. Soft coal is burned slowly in a large, cone-shaped brick oven, for two days or longer. When it is sufficiently burned, water is turned in to cool it off, and the coke is removed. Most coke is used in iron and steel mills. It is also used by blacksmiths, and in locomotives. Illuminating gas is one of the by-products given off in the process of making coke.

IRON

It has been suggested that the first iron workers were savages who innocently built a fire on a rock containing iron ore. When the fire went out, they found that the partly melted rock could be pounded into better shaped tools and weapons than those made from stone. It is perfectly certain that the use of iron is very ancient, and that there is no savage tribe, living in a country containing iron ore, which has not long since solved the problem of its use. The same may be said of copper and tin, and of the alloy bronze which is made from them.

It is probable that the first savages merely built a fire on the iron rock. Later they broke the ore into chunks, and piled it high with wood, placing it between high rocks so as to create a draught. Later it was discovered that if limestone was put into the pile, the impurities would stick to the limestone and form a scum which could be taken off, leaving the pure iron. Finally, some one built a chimney over his pile of ore, and the furnace was invented. That was the primitive method. Today iron is mined, like coal, and in enormous quantities; for in this country, so full of railroads and machinery, almost everything in sight is either made of iron, or has iron in some part of it. The richest iron ore in this country comes from Minnesota and Michigan. Alabama, Virginia, Tennessee and Pennsylvania are next in importance.

A Coal Breaker

The lumps of anthracite coal are lifted to the top of the building and crushed. Then they run down the trough to the screens. Coal is often loaded direct from the breaker to the car.

Iron is never found in the earth in a pure state, as gold and copper often are. Always it is combined with sand, gravel or rock into a compound which is called an ore. The value of the ore depends on the amount of iron that may be gotten out of it. Iron is mined much as coal is; there are drifts, slopes and shafts. Surface ores are scooped up with a steam shovel and loaded on flat cars, or into ore ships. When it is deep lying, it is blasted out in the same manner as coal. Since the iron and coal, and the limestone which is used in reducing the ore and separating the true iron are all very heavy, the "smelters" or furnaces for reducing or smelting the ore are located as near the center of convenience as possible. The most convenient place seems to be near the great coal fields of Pennsylvania. The iron ores from Michigan and Minnesota are brought down the Great Lakes from Duluth to Cleveland, in specially constructed ore ships, and from Cleveland sent to Pittsburgh by rail. Pittsburgh is a center of rail and water transportation. Another center is Bethlehem, Pennsylvania, near the Delaware River.

The ore is smelted in a blast furnace. This is a huge steel cylinder, eighty feet or more tall, lined with fire brick. The bottom of the cylinder is a tank called the hearth. The top is called the stack. The furnace is "charged" from the top with alternate layers of coke, limestone and iron ore. The fire is lighted, and kept burning by a hot air blast introduced through pipes just above the hearth. As the mass melts, it sinks from the stack down to the hearth. The iron runs to the bottom, and the cinders and other impurities which are called slag, rise to the top and are removed through a door above the hearth.

The iron leaves the furnace as a red hot stream of liquid metal. This stream flows through ditches in the earthen floor, and into little molds that are made of sand. Here it cools. The cooled lumps or ingots are called pig iron, or cast iron. The ingots, or "pigs," are perhaps two feet long and six inches through. They may be seen outside a smelter stacked up in long rows like cord-wood, waiting to be shipped to foundries and steel mills. Pig iron is the first step in the process of making iron. It is hard but brittle. It can neither be bent, hammered nor tempered. It must be refined and made over into malleable or wrought iron, before it is good for much. The slag was formerly wasted, but at present several uses have been found for it, principally railway ballast, and in cement making.

By remelting the pig iron, and stirring thoroughly to expel the impurities which have been turned into a gas by the heat, the molten mass becomes a porous cake, composed of pure iron and slag. This is broken up into balls, and the slag squeezed out of it. The result is malleable iron. Iron in this condition can be heated and bent or hammered into different forms. It is not brittle as is cast iron, and is therefore valuable for commercial purposes. It is not yet hard enough to be ground to a fine cutting edge, and tools made of it soon wear off and become dull. It must be once more refined, and made into steel.

Steel was known to the ancients almost as soon as they had learned to smelt iron. But it was always made in small quantities, and its use was restricted to knives, razors, and weapons—swords and spears. In this country, steel is manufactured in enormous quantities for cannon and for war-ship plating, as well as for use in manufactures. There are several methods in use for making steel, according to the end desired. The most common method in this country consists in placing powdered charcoal and crude bar iron in an air-tight crucible, and melting them. The heat drives off the silicon and manganese which are present as impurities, and the iron in the molten state absorbs easily the pure carbon of the charcoal, which is always very carefully proportioned. This process results in a high class steel, which is used in making watch springs and edged tools.

QUESTIONS ON COAL AND IRON

COAL

1. *Describe the steps in the formation of coal.*
2. *What is a coal vein? How is it located?*
3. *Define dip; outcrop.*
4. *What other names are given to hard and soft coal? Give the principal localities where each kind is found.*
5. *How is surface coal mined? What is a drift? How is it mined?*
6. *What is a shaft? How is it divided?*
7. *Why is there always water in a deep mine?*
8. *What is carbonic acid called, when found in mines? Why is it dangerous?*
9. *Why is there danger of fire in deep mines? What is a "safety lamp?"*
10. *Name three ways by which coal is loosened in the vein.*
11. *What dangers are there in blasting?*
12. *How can those dangers be avoided?*
13. *What is a coal "breaker?" How is coal sorted into uniform sizes after being crushed?*
14. *What uses has soft coal? What is coke? What valuable by-product has coke?*

IRON

1. *What story explains the discovery of iron?*
2. *How did the early savages extract the iron?*
3. *Name six states which produce iron ore.*
4. *In what form is iron found in the earth?*
5. *By what method is iron mined?*
6. *In reducing iron ore, what two substances are placed with the ore? State the use of each.*
7. *Describe the blast furnace for smelting iron.*
8. *Why is coke used in smelting instead of coal?*
9. *How is the molten iron run into molds? What are these lumps of iron called?*
10. *What are the qualities of iron in this form?*
11. *How is malleable iron made? For what is it used?*
12. *What is "slag?" What uses has it?*
13. *What two cities in Pennsylvania are centers of the coal and iron industries?*
14. *What is steel? What use did ancient peoples make of it?*
15. *Describe the most common method used in this country for making steel. What objects, principally, are made from this kind of steel?*

U.S. NAVY

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